STIC Database Tracking Number: 161266

TO: Sumesh Kaushal
Location: REM-2B85&2C70
Art Unit: 1633
Tuesday, August 09, 2005

Case Serial Number: 10/787382

From: Edward Hart
Location: Biotech-Chem Library
REM-1A55
Phone: 571-272-2512

edward.hart@uspto.gov

Search Notes

Examiner Kaushal,

Here are the results of the search you requested.

Please feel free to contact me if you have any questions.

Edward Hart

THIS PAGE BLANK (USPTO)

OM nucleic - nucleic search, using sw model

GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

Run on: August 8, 2005, 01:09:58 ; Search time 124.226 Seconds
                                       (without alignments)
                                       8034.812 Million cell updates/sec

Title: US-10-787-382-4
Perfect score: 610
Sequence: 1 caaggcaaacactgaacatt...........acagatgaaatatattgag 610
Scoring table: OLIGO_NUC
Scoring table: Gapop 60.0 , Gapext 60.0
                Gapop 60.0, Gapext 60.0
Searched: 1202784 seqs, 81818359 residues

Word size :   0

Total number of hits satisfying chosen parameters: 2405568

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database :   Issued_Patents_NA:*
      1: /cgn2_6/ptodata/1/ina/5A_COMB.seq:*
      2: /cgn2_6/ptodata/1/ina/5B_COMB.seq:*
      3: /cgn2_6/ptodata/1/ina/6A_COMB.seq:*
      4: /cgn2_6/ptodata/1/ina/6B_COMB.seq:*
      5: /cgn2_6/ptodata/1/ina/PCTUS_COMB.seq:*
      6: /cgn2_6/ptodata/1/ina/backfiles1.seq:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB ID	Description
c 1	610	100.0	610	4	US-09-322-409-80	Sequence 80, Appl
c 2	610	100.0	610	4	US-09-322-409-82	Sequence 82, Appl
c 3	610	100.0	610	4	US-09-451-527-80	Sequence 80, Appl
c 4	610	100.0	610	4	US-09-451-527-82	Sequence 82, Appl
c 5	402	65.9	402	4	US-09-322-409-83	Sequence 83, Appl
c 6	402	65.9	402	4	US-09-322-409-84	Sequence 84, Appl
c 7	402	65.9	402	4	US-09-451-527-83	Sequence 83, Appl
c 8	402	65.9	402	4	US-09-451-527-84	Sequence 84, Appl
c 9	393	64.4	405	4	US-09-371-615A-1	Sequence 1, Appli
c 10	345	56.6	345	4	US-09-322-409-85	Sequence 85, Appl
c 11	345	56.6	345	4	US-09-322-409-87	Sequence 87, Appl
c 12	345	56.6	345	4	US-09-451-527-85	Sequence 85, Appl
c 13	345	56.6	345	4	US-09-451-527-87	Sequence 87, Appl
c 14	22	3.6	27	1	US-08-434-503-41	Sequence 41, Appl
c 15	22	3.6	32	4	US-09-322-409-138	Sequence 138, App
c 16	22	3.6	32	4	US-09-451-527-138	Sequence 138, Appl
c 17	22	3.6	47	1	US-08-466-852-2	Sequence 2, Appli
c 18	22	3.6	816	3	US-09-079-839-2	Sequence 2, Appli
c 19	22	3.6	816	1	US-09-023-655-1236	Sequence 1236, Ap
c 20	22	3.6	3230	3	US-09-280-799-78	Sequence 78, Appl
c 21	22	3.6	3230	6	5324640-1	Patent No. 5324640
c 22	22	3.6	36	4	US-09-322-409-137	Sequence 137, App
c 23	21	3.4	36	4	US-09-451-527-137	Sequence 137, App
c 24	21	3.4	375	4	US-09-556-818-33	Sequence 33, Appl
c 25	21	3.4	375	4	US-09-556-818-37	Sequence 37, Appl
c 26	21	3.4	377	3	US-09-180-864-1	Sequence 1, Appli
c 27	21	3.4	377	3	US-09-180-864-1	Sequence 1, Appli
c 28	21	3.4	381	4	US-09-556-818-27	Sequence 27, Appl
c 29	21	3.4	393	4	US-09-556-818-31	Sequence 31, Appl
c 30	21	3.4	393	4	US-09-556-818-41	Sequence 41, Appl
c 31	21	3.4	399	4	US-09-556-818-39	Sequence 39, Appl
c 32	21	3.4	444	4	US-09-556-818-43	Sequence 43, Appl
c 33	19	3.1	29	5	PCT-US94-10957-16	Sequence 16, Appl
c 34	19	3.1	34629	4	US-09-949-016-13295	Sequence 13295, A
c 35	19	3.1	48996	4	US-09-949-016-12744	Sequence 12744, A
c 36	19	3.1	48997	4	US-09-949-016-17373	Sequence 17373, A
c 37	18	3.0	68444	4	US-09-949-016-13968	Sequence 13968, A
c 38	18	3.0	582	4	US-08-621-841-48	Sequence 48, Appl
c 39	18	3.0	21	3	US-09-248-796A-2176	Sequence 2176, Ap
c 40	18	3.0	601	4	US-09-949-016-44316	Sequence 44316, A
c 41	18	3.0	601	4	US-09-949-016-63405	Sequence 63405, A
c 42	18	3.0	601	4	US-09-949-016-74518	Sequence 74518, A
c 43	18	3.0	601	4	US-09-949-016-74519	Sequence 74519, A
c 44	18	3.0	601	4	US-09-949-016-74520	Sequence 74520, A
c 45	18	3.0	782	4	US-09-270-767-355	Sequence 355, App

ALIGNMENTS

RESULT 1
US-09-322-409-80
Sequence 80, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 80
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (29)..(430)
US-09-322-409-80

Query Match   100.0%; Score 610; DB 4; Length 610;
Best Local Similarity   100.0%;
Matches 610; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 CAAGGCAAACACTGAACATTTCAGAGAGCTATGAGAAGTCTTCTGAATTTGAGTTTGCTAGC 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 CAAGGCAAACACTGAACATTTCAGAGAGCTATGAGAAGTCTTCTGAATTTGAGTTTGCTAGC 60

Qy   61 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC 120

Qy   121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGAACCTGAT 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGAACCTGAT 180

Qy   181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTAT 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTAT 240

Qy   241 AGACACAATTGAAGAAGAACCAAAACTGCCCACGCGGGGAGGGCTGTGGGATAAAACTATTCCAAAACTT 300
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 AGACACAATTGAAGAAGAACCAAAACTGCCCACGCGGGGAGGGCTGTGGGATAAAACTATTCCAAAACTT 300

RESULT 2
US-09-322-409-82/c
; Sequence 82, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shunin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wondering, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09,322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 82
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-322-409-82

  Query Match   100.0%; Score 610; DB 4; Length 610;
  Best Local Similarity   100.0%; Pred. No. 9.9e-301;
  Matches   610; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC   60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 610 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 551

Qy   61 TCTTGGGGCTCGCCTATGTTTCTGCCTTTGCTGTGTAGAAATCCATGAATAGACTGGTGGC 120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 550 TCTTGGGGCTCGCCTATGTTTCTGCCTTTGCTGTAGAAATCCATGAATAGACTGGTGGC 491

Qy 121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGAACCTGAT 180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 490 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGAACCTGAT 431

Qy 181 GATTCCTTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTAT 240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 430 GATTCCTTACTCCTGAAAATAAAAATCACCAACTATTCCAAAACTT 371

Qy 241 AGACACATTGAAGAACCAAAACTGCCCACGGGGGAGGCTGTGTGGATAAAACTATTCCAAAACTT 300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 370 AGACACATTGAAGAACCAAAACTGCCCACGGGGGAGGCTGTGTGGATAAAACTATTCCAAAACTT 311

Qy 301 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAAAGGTGTGCAGGAGGAAAGATGGGAG 360
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 301 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAAAGGTGTGCAGGAGGAAAGATGGGAG 360

Qy 361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATATTCTTGGTGTAATAAAACACCGAGTGGAC 420
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATATTCTTGGTGTAATAAAACACCGAGTGGAC 420

Qy 421 ACCGGAAAGTTGAGAACAAAACCGGCTTATTGTAGTGGGAGATTTGGGAAGAATGGTTT 480
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 421 ACCGGAAAGTTGAGAACAAAACCGGCTTATTGTAGTGGGAGATTTGGGAAGAATGGTTT 480

Qy 481 TTTGGCGGATGAGAATGAGGGGCCAACCAACACAGTAGGGGACTTAATGGCCAGTATAACTAAGC 540
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 481 TTTGGCGGATGAGAATGAGGGGCCAACCAACACAGTAGGGGACTTAATGGCCAGTATAACTAAGC 540

Qy 541 TTCAGAGACAAAGTAAATATTTTCAGGCATCCTACTACTTTCACACAGATGAAA 600
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 541 TTCAGAGACAAAGTAAATATTTTCAGGCATCCTACTACTTTCACACAGATGAAA 600

Qy 601 TATATTTGAG 610
         ||||||||||
Db 601 TATATTTGAG 610

RESULT 3
US-09-451-527-80
; Sequence 80, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shunin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wondering, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 80
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (29)..(430)
US-09-451-527-80

  Query Match   100.0%; Score 610; DB 4; Length 610;
  Best Local Similarity   100.0%; Pred. No. 9.9e-301;
  Matches   610; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC   60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC   60

Qy   61 TCTTGGGGCTCGCCTATGTTTCTGCCTTTGCTGTAGAAATCCATGAATAGACTGGTGGC 120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 TCTTGGGGCTCGCCTATGTTTCTGCCTTTGCTGTAGAAATCCATGAATAGACTGGTGGC 120

Qy 121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGAACCTGAT 180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGAACCTGAT 180

Qy 181 GATTCCTTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTAT 240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 181 GATTCCTTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTAT 240

Qy 301 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAAAGGTGTGCAGGAGGAAAGATGGGAG 360
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 310 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAAAGGTGTGCAGGAGGAAAGATGGGAG 251

Qy 361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATATTCTTGGTGTAATAAAACACCGAGTGGAC 420
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 250 AGTGACAAAGTTCCTAGACTACCTGCAAGTATATTCTTGGTGTAATAAAACACCGAGTGGAC 191

Qy 421 ACCGGAAAGTTGAGAACAAAACCGGCTTATTGTAGTGGGAGATTTGGGAAGAATGGTTT 480
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 190 ACCGGAAAGTTGAGAACAAAACCGGCTTATTGTAGTGGGAGATTTGGGAAGAATGGTTT 131

Qy 481 TTTGGCGGATGAGAATGAGGGGCCAACCAACACAGTAGGGGACTTAATGGCCAGTATAACTAAGC 540
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 130 TTTGGCGGATGAGAATGAGGGGCCAACCAACACAGTAGGGGACTTAATGGCCAGTATAACTAAGC 71

Qy 541 TTCAGAGACAAAGTAAATATTTTCAGGCATCCTACTACTTTCACACAGATGAAA 600
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   70 TTCAGAGACAAAGTAAATATTTTCAGGCATCCTACTACTTTCACACAGATGAAA 11

Qy 601 TATATTTGAG 610
         ||||||||||
Db   10 TATATTTGAG 1

RESULT 4

US-09-451-527-82/c

; Sequence 82, Application US/09451527
; Patent No. 648403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 82
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris

US-09-451-527-82

Query Match   100.0%; Score 610; DB 4; Length 610;
Best Local Similarity   100.0%; Pred. No. 9.9e-301;
Matches 610; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

```
Qy      1 CAAGGCAAACTGAACATTCAGAGCTATGAGAATGCTTCGAATTGAATTGAGTTGCTAGC   60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    610 CAAGGCAAACTGAACATTCAGAGCTATGAGAATGCTTCGAATTGAATTGAGTTGCTAGC  551

Qy     61 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTGTAGAGAAATCCCATGAATAGACTGGTGGC  120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    550 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTGTAGAGAAATCCCATGAATAGACTGGTGGC  491

Qy    121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGGATGGGAACCTGAT  180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    490 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGGATGGGAACCTGAT  431

Qy    181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTAT  240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 AGACACATTGAAGAACCAAACTGCCCACGGGGGAGGCGTGTGGGATAAACTATTCCAAAACTT  300

Qy    241 AGACACATTGAAGAACCAAACTGCCCACGGGGGAGGCGTGTGGGATAAACTATTCCAAAACTT  300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 AGACACATTGAAGAACCAAACTGCCCACGGGGGAGGCGTGTGGGATAAACTATTCCAAAACTT  300

Qy    301 GTCTTTAATAAAAGAACACATAGAGCCCAAAAAAAAAAGGTGTGCAGGAGAAGATGGAG  360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 GTCTTTAATAAAAGAACACATAGAGCCCAAAAAAAAAAGGTGTGCAGGAGAAGATGGAG  360

Qy    361 AGTGACAAAGTTCCTAGACTACCTCGCAAGTATTTCTTGGTGTTAATAAAACACCGAGTGGAC  420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    361 AGTGACAAAGTTCCTAGACTACCTCGCAAGTATTTCTTGGTGTTAATAAAACACCGAGTGGAC  420

Qy    421 ACCGGAAAGTTGAGAACCAAACCGGGCTTATTGTTAGTGGAAGAATTTTGGGAGGAATGGTTT  480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    421 ACCGGAAAGTTGAGAACCAAACCGGGCTTATTGTTAGTGGAAGAATTTTGGGAGGAATGGTTT  480

Qy    481 TTTGGCCGATGGAGGATGAGGGGCCAACCAACAGTAGGGGACTTAATGGCCAGTATAACTAAGC  540
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    481 TTTGGCCGATGGAGGATGAGGGGCCAACCAACAGTAGGGGACTTAATGGCCAGTATAACTAAGC  540

Qy    541 TTCAGAGACAAAGTAAATATTTCAGGGCCATCCTACTTTATCACTTCACACAGATGAAA  600
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    541 TTCAGAGACAAAGTAAATATTTCAGGGCCATCCTACTTTATCACTTCACACAGATGAAA  600

Qy    601 TATATTTGAG  610
          ||||||||||
Db    601 TATATTTGAG  610
```

RESULT 5

US-09-322-409-83

; Sequence 83, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 83
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris

US-09-322-409-83

Query Match   65.9%; Score 402; DB 4; Length 402;
Best Local Similarity   100.0%; Pred. No. 9.6e-195;
Matches 402; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

```
Qy     29 ATGAGAATGCTTCTGAATTGAATTGAGTTGCCTAGCTCTGGGGGCTGCCTATGTTTTCGCCTTT   88
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 ATGAGAATGCTTCTGAATTGAATTGAGTTGCTCTAGCTCTGGGGCTGCCTATGTTTTCGCCTTT   60

Qy     89 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCGAGAGACTTGACAACTGCTCTCCACTCAT  148
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCGAGAGACTTGACAACTGCTCTCCACTCAT  120

Qy    149 CGAACTTGGCTGCTGATAGGCGATGGGACAACTTGGTAGATGATTTCCTACTCCTGAAAATCAC  208
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 CGAACTTGGCTGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATCAC  180
```

```
Qy    209 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAAACTGCCCAC 268
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAAACTGCCCAC 240

Qy    269 GGGGGAGGCTGTGGATAAAACTATTCCAAAAACTGTCTTTAATAAAAGAACACATAGAGCGC 328
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 GGGGGAGGCTGTGGATAAAACTATTCCAAAAACTGTCTTTAATAAAAGAACACATAGAGCGC 300

Qy    329 CAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 CAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Qy    389 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 430
          ||||||||||||||||||||||||||||||||||||||||||||
Db    361 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 402
```

RESULT 6
US-09-322-409-84/c
; Sequence 84, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 84
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-322-409-84

Query Match   65.9%;   Score 402;   DB 4;   Length 402;
Best Local Similarity   100.0%;   Pred. No. 9.6e-195;
Matches   402;   Conservative   0;   Mismatches   0;   Indels   0;   Gaps   0;

```
Qy     29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGCGGCTGCCTATGTTTCTGCCTTT 88
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGCGGCTGCCTATGTTTCTGCCTTT 60

Qy     89 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACACCTTGACACTGCTCTCCACTCAT 148
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACACCTTGACACTGCTCTCCACTCAT 120

Qy    149 CGAACTTGGCTGATAGGCGATGGGGAACCTGACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 208

Db    282 CGAACTTGGCTGATAGGCGATGGGGAACCTGACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 223

Qy    209 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAAACTGCCCAC 268

Db    222 ...

Qy    269 GGGGGAGGCTGTGGATAAAACTATTCC... 328

Db    162 ...

Qy    329 CAAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388

Db    102 CAAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGAGTGACAAAGTTCCTAGACTACCTGCAA 43

Qy    389 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 430

Db     42 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 1
```

RESULT 7
US-09-451-527-83
; Sequence 83, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 83
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-451-527-83

Query Match   65.9%;   Score 402;   DB 4;   Length 402;
Best Local Similarity   100.0%;   Pred. No. 9.6e-195;
Matches   402;   Conservative   0;   Mismatches   0;   Indels   0;   Gaps   0;

```
Qy     29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGCGGCTGCCTATGTTTCTGCCTTT 88
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGCGGCTGCCTATGTTTCTGCCTTT 60

Qy     89 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACACCTTGACACTGCTCTCCACTCAT 148
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACACCTTGACACTGCTCTCCACTCAT 120

Qy    149 CGAACTTGGCTGATAGGCGATGGGGAACCTGACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 208
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 CGAACTTGGCTGATAGGCGATGGGGAACCTGACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180

Qy    209 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAAACTGCCCAC 268
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAAACTGCCCAC 240

Qy    269 GGGGGAGGCTGTGGATAAAACTATTCCAAAAACTGTCTTTAATAAAAGAACACATAGAGCGC 328
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 GGGGGAGGCTGTGGATAAAACTATTCCAAAAACTGTCTTTAATAAAAGAACACATAGAGCGC 300

Qy    329 CAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 CAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Qy    389 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 402
          ||||||||||||||||||||||||||||||||||||||||||||
Db    361 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 402
```

RESULT 8
US-09-451-527-84/c
; Sequence 84, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527

```
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 84
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-451-527-84

Query Match             65.9%;  Score 402;  DB 4;  Length 402;
Best Local Similarity   100.0%;  Pred. No. 9.6e-195;
Matches   402;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy   29 ATGAGAATGCTTCTGAATTTGAGTTTCTAGTTGCCTTTGGGGGCTGCCTATGTTTTCTGCCTTT 88
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  402 ATGAGAATGCTTCTGAATTTGAGTTTCTAGTTGCCTTTGGGGGCTGCCTATGTTTTCTGCCTTT 343

Qy   89 GCTGTAGAAAAATCCCATGAATAGACTGGTGCCAGAGAC 148
         |||||||||||||||||||||||||||||||||||||||
Db  342 GCTGTAGAAAAATCCCATGAATAGACTGGTGCCAGAGAC 283

Qy  149 CGAACTTGGCTCGATAGGCGATGGGAACCTGACTGATGATTCCTACTCCTGAAAATAAAATCAC 208
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  282 CGAACTTGGCTCGATAGGCGATGGGAACCTGACTGATGATTCCTACTCCTGAAAATAAAATCAC 223

Qy  209 CAACTGTGCATTAAAGAGAAGTTTTTCAGGGTATAGACAGCCAGAGACCAAAACTGCCCAC 268
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  222 CAACTGTGCATTAAAGAGAAGTTTTTCAGGGTATAGACAGCCAGAGACCAAAACTGCCCAC 163

Qy  269 GGGGGAGGCTGTGGATAAAACTAATTCCAAAAACTTGTCTTTAATAAAGAACACATAGAGCGC 328
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  162 GGGGGAGGCTGTGGATAAAACTAATTCCAAAAACTTGTCTTTAATAAAGAACACATAGAGCGC 103

Qy  329 CAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCCAA 388
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  102 CAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCCAA 43

Qy  389 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGAAAGT 430
         |||||||||||||||||||||||||||||||||||||||||
Db   42 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGAAAGT 1
```

```
RESULT 9
US-09-371-615A-1
; Sequence 1, Application US/0937161615A
; Patent No. 6537781
; GENERAL INFORMATION:
; APPLICANT: IDEXX LABORATORIES
; TITLE OF INVENTION: METHODS AND COMPOSITIONS CONCERNING
;   CANINE INTERLEUKIN 5
; FILE REFERENCE: 03604001700US00
; CURRENT APPLICATION NUMBER: US/09/371,615A
; CURRENT FILING DATE: 1999-08-10
; NUMBER OF SEQ ID NOS: 8
; SOFTWARE: FastSEQ for Windows Version 3.0
;
; SEQ ID NO 1
; LENGTH: 405
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-371-615A-1

Query Match             64.4%;  Score 393;  DB 4;  Length 405;
Best Local Similarity   100.0%;  Pred. No. 3.7e-190;
Matches   393;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy   29 ATGAGAATGCTTCTGAATTTGAGTTTCTAGTTGCCTTTGGGGGCTGCCTATGTTTTCTGCCTTT 88
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 ATGAGAATGCTTCTGAATTTGAGTTTCTAGTTGCCTTTGGGGGCTGCCTATGTTTTCTGCCTTT 60

Qy   89 GCTGTAGAAAAATCCCATGAATAGACTGGTGCCAGAGAC 148
         |||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTAGAAAAATCCCATGAATAGACTGGTGCCAGAGAC 120

Qy  149 CGAACTTGGCTCGATAGGCGATGGGAACCTGACTGATGATTCCTACTCCTGAAAATAAAATCAC 208
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 CGAACTTGGCTCGATAGGCGATGGGAACCTGACTGATGATTCCTACTCCTGAAAATAAAATCAC 180

Qy  209 CAACTGTGCATTAAAGAGAAGTTTTTCAGGGTATAGACAGCCAGAGACCAAAACTGCCCAC 268
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 CAACTGTGCATTAAAGAGAAGTTTTTCAGGGTATAGACAGCCAGAGACCAAAACTGCCCAC 240

Qy  269 GGGGGAGGCTGTGGATAAAACTAATTCCAAAAACTTGTCTTTAATAAAGAACACATAGAGCGC 328
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 GGGGGAGGCTGTGGATAAAACTAATTCCAAAAACTTGTCTTTAATAAAGAACACATAGAGCGC 300

Qy  329 CAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCCAA 388
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301 CAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCCAA 360

Qy  389 GTATTTCTTGGTGTAATAAACACCGAGTGGACA 421
         |||||||||||||||||||||||||||||||||
Db  361 GTATTTCTTGGTGTAATAAACACCGAGTGGACA 393
```

```
RESULT 10
US-09-322-409-85
; Sequence 85, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 85
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(345)
US-09-322-409-85

Query Match             56.6%;  Score 345;  DB 4;  Length 345;
Best Local Similarity   100.0%;  Pred. No. 1.1e-165;
Matches   345;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy   86 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGCCAGAGACCTTGACACTGCTTCCCACT 145
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGCCAGAGACCTTGACACTGCTTCCCACT 60

Qy  146 CATCGAACTTGGCTCGATAGGCGATGGGAACCTGACTGATGATTCCTACTCCTGAAAATAAAAT 205
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CATCGAACTTGGCTCGATAGGCGATGGGAACCTGACTGATGATTCCTACTCCTGAAAATAAAAT 120

Qy  206 CACCAACTGTGCATTAAAGAGAAGTTTTTCAGGGTATAGACAGCCAGAGACCAAAACTGCC 265
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 CACCAACTGTGCATTAAAGAGAAGTTTTTCAGGGTATAGACAGCCAGAGACCAAAACTGCC 180

Qy  266 CACGGGGGAGGCTGTGGATAAAACTAATTCCAAAAACTTGTCTTTAATAAAGAACACATAGAG 325
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 CACGGGGGAGGCTGTGGATAAAACTAATTCCAAAAACTTGTCTTTAATAAAGAACACATAGAG 240

Qy  326 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 385
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
```

```
Db   241 CGCCAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGGAGTGACAAAGTTCCTAGACTACCTG
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Qy   386 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 430
         ||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
```

RESULT 11
US-09-322-409-87/c
; Sequence 87, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shumin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C1
;   CURRENT APPLICATION NUMBER: US/09/322,409
;   CURRENT FILING DATE: 1999-05-28
;   EARLIER APPLICATION NUMBER: 60/087,306
;   EARLIER FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 154
;   SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 87
;   LENGTH: 345
;   TYPE: DNA
;   ORGANISM: Canis familiaris
US-09-322-409-87

  Query Match   56.6%; Score 345; DB 4; Length 345;
  Best Local Similarity 100.0%; Pred. No. 1.1e-165;
  Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   86 TTTGCTGTAGAAAATCCCATGAAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 145
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   345 TTTGCTGTAGAAAATCCCATGAAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 286

Qy   146 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 205
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   285 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 226

Qy   206 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 265
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   225 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 166

Qy   266 CACGGGCGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 325
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   165 CACGGGCGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 106

Qy   326 CGCCAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGGAGTGACAAAGTTCCTAGACTACCTG 385
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   105 CGCCAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGGAGTGACAAAGTTCCTAGACTACCTG 46

Qy   386 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 430
         |||||||||||||||||||||||||||||||||||||||||||||
Db   45 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 1
```

RESULT 12
US-09-451-527-85
; Sequence 85, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shumin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C2

---

```
;   CURRENT APPLICATION NUMBER: US/09/451,527
;   CURRENT FILING DATE: 1999-12-01
;   EARLIER APPLICATION NUMBER: 09/322,409
;   EARLIER FILING DATE: 1999-05-28
;   EARLIER APPLICATION NUMBER: 60/087,306
;   EARLIER FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 174
;   SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 85
;   LENGTH: 345
;   TYPE: DNA
;   ORGANISM: Canis familiaris
;   FEATURE:
;     NAME/KEY: CDS
;     LOCATION: (1)..(345)
US-09-451-527-85

  Query Match    56.6%;  Score 345;  DB 4;  Length 345;
  Best Local Similarity  100.0%;  Pred. No. 1.1e-165;
  Matches 345;  Conservative 0;  Mismatches 0;  Indels 0;  Gaps 0;

Qy    86 TTTGCTGTAGAAAATCCCATGAAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 145
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     1 TTTGCTGTAGAAAATCCCATGAAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60

Qy   146 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 205
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    61 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120

Qy   206 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 265
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180

Qy   266 CACGGGCGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 325
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CACGGGCGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240

Qy   326 CGCCAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGGAGTGACAAAGTTCCTAGACTACCTG 385
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 CGCCAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGGAGTGACAAAGTTCCTAGACTACCTG 300

Qy   386 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 430
         |||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
```

RESULT 13
US-09-451-527-87/c
; Sequence 87, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shumin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C2
;   CURRENT APPLICATION NUMBER: US/09/451,527
;   CURRENT FILING DATE: 1999-12-01
;   EARLIER APPLICATION NUMBER: 09/322,409
;   EARLIER FILING DATE: 1999-05-28
;   EARLIER APPLICATION NUMBER: 60/087,306
;   EARLIER FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 174
;   SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 87
;   LENGTH: 345
;   TYPE: DNA
;   ORGANISM: Canis familiaris
US-09-451-527-87

  Query Match   56.6%; Score 345; DB 4; Length 345;

Best Local Similarity 100.0%; Pred. No. 1.1e-165;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy   86 TTTGCTGTAGAAAATCCCATGAATACGACTGGTTGGGCAGAGACCTTGACACTGCTTCCACT 145
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  345 TTTGCTGTAGAAAATCCCATGAATACGACTGGTTGGGCAGAGACCTTGACACTGCTTCCACT 286

Qy  146 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATCATTCCTACTCCTGAAAATAAAAAT 205
        |||||||||||||||||||||| |||||||||||||||||||||||||||||||||||||||
Db  285 CATCGAACTTGGCTGATAGGCGGAACCTGATGATCATTCCTACTCCTGAAAATAAAAAT 226

Qy  206 CACCAACTGTGCATTAAAGAAGATTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 265
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  225 CACCAACTGTGCATTAAAGAAGATTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 166

Qy  266 CACGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAGAGACACATAGAG 325
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  165 CACGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAGAGACACATAGAG 106

Qy  326 CGCCAAAAAAAAGGTGTGCAGGGAGAGAAAGATTGGGAGAGTGACAAAGTTCCTAGACTACCTG 385
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  105 CGCCAAAAAAAAAGGTGTGCAGGGAGAGAAAGATTGGGAGAGTGACAAAGTTCCTAGACTACCTG 46

Qy  386 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 430
        |||||||||||||||||||||||||||||||||||||||||||||
Db   45 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 1
```

RESULT 14
US-08-434-503-41
; Sequence 41, Application US/0843503
; Patent No. 5616490
; GENERAL INFORMATION:
; APPLICANT: Sean M. Sullivan
; APPLICANT: Kenneth G. Draper
; TITLE OF INVENTION: METHOD AND REAGENT FOR
; TITLE OF INVENTION: TREATMENT OF INFLAMMATORY
; TITLE OF INVENTION: DISEASE
; NUMBER OF SEQUENCES: 54
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lyon & Lyon
; STREET: 611 West Sixth Street
; CITY: Los Angeles
; STATE: California
; COUNTRY: USA
; ZIP: 90017
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5" Diskette, 1.44 Mb storage
; COMPUTER: IBM Compatible
; OPERATING SYSTEM: IBM MS-DOS (Version 5.0)
; SOFTWARE: WordPerfect (Version 5.1)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US 08/008,895
; FILING DATE: 19-JAN-1993
; APPLICATION NUMBER: 07/989,849
; FILING DATE: December 7, 1992
; ATTORNEY/AGENT INFORMATION:
; NAME: Warburg, Richard J.
; REGISTRATION NUMBER: 32,327
; REFERENCE/DOCKET NUMBER: 200/276
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (213) 489-1600
; TELEFAX: (213) 955-0440
; TELEX: 67-3510
; INFORMATION FOR SEQ ID NO: 41:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 27
; TYPE: nucleic acid
; STRANDEDNESS: single

; TOPOLOGY: linear
US-08-434-503-41
Query Match   3.6%; Score 22; DB 1; Length 27;
Best Local Similarity   54.5%; Pred. No. 0.38;
Matches 12; Conservative 10; Mismatches 0; Indels 0; Gaps 0;

```
Qy   45 ATTTGAGTTTCGCTAGCTCTTCTTGG 66
        |::||||:||::|||:|||||||:||
Db    1 AUUUGAGUUUCCUAGCUCUCUUGG 22
```

RESULT 15
US-09-322-409-138/c
; Sequence 138, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1998-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 138
; LENGTH: 32
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Synthetic
; OTHER INFORMATION: Primer
US-09-322-409-138

Query Match   100.0%; Score 22; DB 4; Length 32;
Best Local Similarity   22%; Pred. No. 0.38;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy  413 GAGTGGCACCGGAAAGTTGAG 434
        |||||||||||||||||||||
Db   32 GAGTGGCACCGGAAAGTTGAG 11
```

Search completed: August 8, 2005, 13:43:35
Job time : 124.226 secs

OM nucleic - nucleic search, using sw model

GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

Run on: August 8, 2005, 09:20:09 ; Search time 408.892 Seconds
                                       (without alignments)
                                       8831.282 Million cell updates/sec

Title: US-10-787-382-4
Perfect score: 610
Sequence: 1 caaggcaaacactgaacatt.........acagatgaaatatattgag 610
Scoring table: OLIGO_NUC
                Gapop 60.0 , Gapext 60.0
Searched: 4390206 seqs, 295987066? residues
Word size :   0
Total number of hits satisfying chosen parameters: 8780412
Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database :   N_Genesq_16Dec04:*
          1:    geneseqn1980s:*
          2:    geneseqn1990s:*
          3:    geneseqn200s:*
          4:    geneseqn2001as:*
          5:    geneseqn2001bs:*
          6:    geneseqn2002as:*
          7:    geneseqn2002bs:*
          8:    geneseqn2003as:*
          9:    geneseqn2003bs:*
         10:    geneseqn2003cs:*
         11:    geneseqn2003ds:*
         12:    geneseqn2004as:*
         13:    geneseqn2004bs:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

	Result No.	Score	% Query Match	Length	DB	ID	Description
	1	610	100.0	610	3	AAZ55546	Aaz55546 Canine in
c	2	610	100.0	610	3	AAZ55547	Aaz55547 Canine in
c	3	402	65.9	402	3	AAZ55548	Aaz55548 Canine in
c	4	402	65.9	402	3	AAZ55549	Aaz55549 Canine in
	5	393	64.4	405	4	AAF74300	Aaf74300 Canine in
	6	345	56.6	345	3	AAZ55550	Aaz55550 Canine ma
c	7	345	56.6	345	3	AAZ55551	Aaz55551 Canine ma
c	8	270	44.3	393	4	AAF74306	Aaf74306 Canine in
c	9	252	41.3	252	4	AAF74305	Aaf74305 Canine in
	10	43	7.0	399	2	AAT50756	Aat50756 Ovine IL-
	11	43	7.0	520	2	AAT50755	Aat50755 Ovine IL-
	12	41	6.7	838	2	AAZ44265	Aaz44265 Porcine I
	13	22	3.6	27	2	AAQ57191	Aaq57191 Enzymatic
	14	22	3.6	32	2	AAZ55592	Aaz55592 Canine IL
	15	22	3.6	89	2	AAX54641	Aax54641 Human IL-
	16	22	3.6	89	3	AAA34088	Aaa34088 Human ade
	17	22	3.6	89	3	AAF20210	Aaf20210 Human IL5
	18	22	3.6	10		ABZ95904	Abz95904 Human IL-
	19	22	3.6	11		ABD19258	Abd19258 Human IL5
	20	22	3.6	145	2	AAT06755	Aat06755 Synthetic
c	21	22	3.6	257	2	AAX54636	Aax54636 Human IL-
c	22	22	3.6	257	3	AAA34083	Aaa34083 Human ade
c	23	22	3.6	257	3	AAF20205	Aaf20205 Human IL5
c	24	22	3.6	257	10	ABZ95899	Abz95899 Human IL5
c	25	22	3.6	257	11	ABD19245	Abd19245 Human IL5
c	26	22	3.6	385	3	AAA43842	Aaa43842 Human sec
c	27	22	3.6	402	3	AAN81380	Aan81380 A Human B
c	28	22	3.6	702	4	AAH92591	Aah92591 Human inf
c	29	22	3.6	816	3	AAA34857	Aaa34857 Human ade
c	30	22	3.6	816	3	AAA13338	Aaa13338 Human int
c	31	22	3.6	816	3	AAF20979	Aaf20979 Human low
c	32	22	3.6	816	3	ADG33104	Adg33104 Human DNA
c	33	22	3.6	816	10	ABZ96673	Abz96673 Human nuc
c	34	22	3.6	816	10	ACF63368	Acf63368 Human int
c	35	22	3.6	816	11	ADI31910	Adi31910 Human cDN
c	36	22	3.6	816	13	ADP56009	Adp56009 Human PRO
c	37	22	3.6	3230	1	AAN81381	Aan81381 Entire nu
c	38	22	3.6	3230	2	AAQ74056	Aaq74056 Human int
c	39	22	3.6	3230	3	AAC73725	Aac73725 Human int
c	40	22	3.6	3230	8	ABX04379	Abx04379 Human Int
c	41	22	3.6	3230	12	ADN12146	Adn12146 Interleuk
c	42	22	3.6	3230	12	ADR12056	Adr12056 Human int
c	43	22	3.6	3241	3	AAA34856	Aaa34856 Human ade
c	44	22	3.6	3241	3	AAF20978	Aaf20978 Human low
c	45	22	3.6	3241	10	ABZ96672	Abz96672 Human nuc

ALIGNMENTS

RESULT 1
AAZ55546
ID   AAZ55546 standard; cDNA; 610 BP.
XX
AC   AAZ55546;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
FH   Key   Location/Qualifiers
FT   CDS   29. .433
FT   /*tag= a
FT   /product= "Canine IL-5"
XX
PN   WO961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999;   99WO-US011942.
XX
PR   29-MAY-1998;   98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58219.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 223-224; 264pp; English.
XX
CC   Sequences AAZ55546-Z55551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-5, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40

```
CC   lligand), canine IL-5, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acid, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting.
XX
SQ   Sequence 610 BP; 202 A; 114 C; 139 G; 155 T; 0 U; 0 Other;

Query Match             100.0%;  Score 610;  DB 3;  Length 610;
Best Local Similarity   100.0%;  Pred. No. 1.9e-306;
Matches  610;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 CAAGGCAAACAACTGAACATTTCAGAGCTATGAGAAGTGCTTCTGAATTTGAGTTTGCTAGC 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 CAAGGCAAACAACTGAACATTTCAGAGCTATGAGAAGTGCTTCTGAATTTGAGTTTGCTAGC 60

Qy         61 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGAACTGGTGGC 120
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGAACTGGTGGC 120

Qy        121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGAT 180
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGAT 180

Qy        181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCCATTAAAGAAGTTTTTCAGGGTAT 240
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCCATTAAAGAAGTTTTTCAGGGTAT 240

Qy        241 AGACACATTGAAGAACCAAACTGCCCACGGGGAGGCGTGTGGATAAACTATTCCAAAACTT 300
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 AGACACATTGAAGAACCAAACTGCCCACGGGGAGGCGTGTGGATAAACTATTCCAAAACTT 300

Qy        301 GTCTTTAATAAAAGAACCATAGAGGGCCAAAAAAAAAAGTGTTGCAGGAGAGATGGAG 360
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 GTCTTTAATAAAAGAACCATAGAGGGCCAAAAAAAAAAGTGTTGCAGGAGAGATGGAG 360

Qy        361 AGTAGACAAAGTTCCTAGACTACCTGCCAAGTATATTTCTTGGTGTTAATAAACACCGAGTGGAC 420
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 AGTAGACAAAGTTCCTAGACTACCTGCCAAGTATATTTCTTGGTGTTAATAAACACCGAGTGGAC 420

Qy        421 ACCGGAAAAGTTGAGACAAAACCGGCTTATTGTAGTGTAGTGAGGAGAAGATGGTTT 480
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 ACCGGAAAAGTTGAGACAAAACCGGCTTATTGTAGTGTAGTGAGGAGAAGATGGTTT 480

Qy        481 TTTGGCGATGAGAATGAGGGGCCCAACAGTAGGGACTTAATGGCCAGTATAACTAAGC 540
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        481 TTTGGCGATGAGAATGAGGGGCCCAACAGTAGGGACTTAATGGCCAGTATAACTAAGC 540

Qy        541 TTCAGAGACAAAAGTAAATATTTCAGGCATCCTACTTTATTCACTTCACACAGATGAAA 600
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        541 TTCAGAGACAAAAGTAAATATTTCAGGCATCCTACTTTATTCACTTCACACAGATGAAA 600

Qy        601 TATATTTGAG 610
              ||||||||||
Db        601 TATATTTGAG 610
```

```
DT   14-MAR-2000 (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA complement.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
     Key            Location/Qualifiers
     CDS            complement(178..582)
                    /*tag= a
                    /product= "Canine IL-5"
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999; 99WO-US011942.
XX
PR   29-MAY-1998; 98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58219.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 224-225; 264pp; English.
XX
CC   Sequences AA255546-255551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection. The nucleotide
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting.
XX
SQ   Sequence 610 BP; 155 A; 139 C; 114 G; 202 T; 0 U; 0 Other;

Query Match             100.0%;  Score 610;  DB 3;  Length 610;
Best Local Similarity   100.0%;  Pred. No. 1.9e-306;
Matches  610;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 CAAGGCAAACAACTGAACATTTCAGAGCTATGAGAAGTGCTTCTGAATTTGAGTTTGCTAGC 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        610 CAAGGCAAACAACTGAACATTTCAGAGCTATGAGAAGTGCTTCTGAATTTGAGTTTGCTAGC 551

Qy         61 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGAACTGGTGGC 120
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        550 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGAACTGGTGGC 491

Qy        121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGAT 180
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        490 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGAT 431

Qy        181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCCATTAAAGAAGTTTTTCAGGGTAT 240
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        430 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCCATTAAAGAAGTTTTTCAGGGTAT 240
```

```
RESULT 2
AA255547
ID   AA255547 standard; cDNA; 610 BP.
XX
AC   AA255547;
XX
```

RESULT 3
AAZ55548
ID   AAZ55548 standard; cDNA; 402 BP.
XX
AC   AAZ55548;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA coding region.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999;   99WO-US011942.
XX
PR   29-MAY-1998;   98US-0087306P.
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58219.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
PA   (HESK-) HESKA CORP.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 225; 264pp; English.
XX
CC   Sequences AAZ55546-255551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors and
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting
XX
SQ   Sequence 402 BP; 129 A; 79 C; 93 G; 101 T; 0 U; 0 Other;

Query Match   65.9%; Score 402; DB 3; Length 402;
Best Local Similarity   100.0%; Pred. No. 2.8e-198;
Matches 402; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTTCTTGGGGCTGCCTAGTTTGTTTGCCTTT 88
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTTCTTGGGGCTGCCTAGTTTGTTTGCCTTT 60

Qy   89 GCTGTAGAAAATCCCATGAAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACTCAT 148
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTAGAAAATCCCATGAAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy   149 CGAACTTCGGCTGATTAGGCGGATGGGAACCTGATCGATGAATTCCTACTCCTGAAAATAAAATAC 208
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CGAACTTGGCTGATTAGGCGGATGGGAACCTGATCGATGAATTCCTACTCCTGAAAATAAAATAC 180

Qy   209 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 268
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CAACTGTCCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240

Qy   269 GGGGAGGCGTGTGGATAAACTATTCCAAAACTATTGTCTTTAATAAAAGAACACATAGAGCGC 328
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 GGGGAGGCGTGTGGATAAACTATTCCAAAACTATTGTCTTTAATAAAAGAACACATAGAGCGC 300

Qy   329 CAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Qy   389 GTATTTCTTGGGTGTAATAAACCACCGAGTGGACACCGGAAAGT 430
              ||||||||||||||||||||||||||||||||||||||||||||
Db   361 GTATTTCTTGGGTGTAATAAACCACCGAGTGGACACCGGAAAGT 402

RESULT 4
AAZ55549/c
ID   AAZ55549 standard; cDNA; 402 BP.
XX
AC   AAZ55549;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA coding region complement.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999;   99WO-US011942.
XX
PR   29-MAY-1998;   98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;

Left column

```
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58219.
XX
PT   ...
XX
PS   Claim 1h; Page 226; 264pp; English.
XX
CC   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
     useful for treating or preventing e.g. tumors or autoimmune disease.
CC   Sequences AA255546-255551 represent cDNA sequences encoding canine
     interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
     feline flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
     ligand), canine IL-5, feline interferon-alpha (IFN-alpha) and feline
     granulocyte macrophage colony-stimulating factor (GMCSF), and
     nucleotides which encode these immunoregulatory proteins. The proteins,
     their associated nucleic acids, specific antibodies and inhibitors may be
     used as vaccines for therapeutic or prophylactic regulation of an immune
     response in animals (particularly cats, dogs, horses and humans). They
     may be used to treat autoimmune or infectious diseases including
     allergies, tumours, inflammation and graft rejection, and to increase the
     response from a co-administered antigen. The nucleotide sequences can
     also be used for the recombinant production of a protein, while
     nucleotide fragments are useful as probes, as amplification primers and
     as sources of inhibitory therapeutics (e.g. antisense oligonucleotides).
     The proteins may be used to raise antibodies and to screen for modulators
     of activity, while the antibodies may be used in detection, and in drug
     targetting.
XX
SQ   Sequence 402 BP; 101 A; 93 C; 79 G; 129 T; 0 U; 0 Other;
XX
     Query Match        65.9%;  Score 402;  DB 3;  Length 402;
     Best Local Similarity   100.0%;
     Matches 402;  Conservative 0;  Mismatches 0;  Indels 0;  Gaps 0;
                       Pred. No. 2.8e-198;

Qy   29 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGTGCTCCTATGTTTCTGCCTTT 88
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  402 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGTGCTCCTATGTTTCTGCCTTT 343

Qy   89 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 148
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  342 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 283

Qy  149 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 208
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  282 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 223

Qy  209 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAAGAACCAAACTGCCCAC 268
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  222 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAAGAACCAAACTGCCCAC 163

Qy  269 GGGGAGGCCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 328
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  162 GGGGAGGCCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 103

Qy  329 CAAAAAAAAAAGGTGTGCAGAGAAAGATGAGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  102 CAAAAAAAAAAGGTGTGCAGAGAAAGATGAGAGAGTGACAAAGTTCCTAGACTACCTGCAA 43

Qy  389 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 430
         ||||||||||||||||||||||||||||||||||||||||||
Db   42 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 1
```

RESULT 5

```
AAF74300
ID   AAF74300 standard; DNA; 405 BP.
XX
AC   AAF74300;
XX
DT   04-MAY-2001  (first entry)
XX
DE   Canine interleukin-5 coding sequence #1.
XX
```

Right column

```
KW   Dog; interleukin-5; IL-5; allergy; cancer; gene therapy;
KW   inflammatory reaction; ds.
XX
OS   Canis sp.
XX
PN   WO200111049-A2.
XX
PD   15-FEB-2001.
XX
PF   09-AUG-2000; 2000WO-US021651.
XX
PR   10-AUG-1999;  99US-00371615.
XX
PA   (IDEX-) IDEXX LAB INC.
XX
PI   Guo H, Lawton R, Mermer B, Aiyappa AP;
XX
PT   ...
XX
DR   WPI; 2001-191542/19.
DR   P-PSDB; AAB72615.
XX
CC   Novel canine interleukin 5 polynucleotide and polypeptides are used for
     generating antibodies which are useful in treating allergies in dogs.
CC   Claim 31; Page 46; 48pp; English.
CC   The present invention provides the protein and coding sequences of the
     canine interleukin-5 (IL-5) protein. This can be used to treat allergies,
     cancer and inflammatory reactions in dogs. The present sequence is one
     version of the IL-5 coding sequence shown in the specification
XX
SQ   Sequence 405 BP; 131 A; 77 C; 94 G; 103 T; 0 U; 0 Other;
XX
     Query Match        64.4%;  Score 393;  DB 3;  Length 405;
     Best Local Similarity   100.0%;
     Matches 393;  Conservative 0;  Mismatches 0;  Indels 0;  Gaps 0;
                       Pred. No. 1.3e-193;

Qy   29 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGTGCTCCTATGTTTCTGCCTTT 88
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGTGCTCCTATGTTTCTGCCTTT 60

Qy   89 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 148
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy  149 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 208
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 180

Qy  209 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAAGAACCAAACTGCCCAC 268
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAAGAACCAAACTGCCCAC 240

Qy  269 GGGGAGGCCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 328
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 GGGGAGGCCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300

Qy  329 CAAAAAAAAAAGGTGTGCAGAGAAAGATGAGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301 CAAAAAAAAAAGGTGTGCAGAGAAAGATGAGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Qy  389 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACA 421
         |||||||||||||||||||||||||||||||||||
Db  361 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACA 393
```

RESULT 6

```
AA255550
ID   AA255550 standard; cDNA; 345 BP.
XX
AC   AA255550;
XX
DT   14-MAR-2000  (first entry)
XX
```

DE   Canine mature interleukin-5 (IL-5) cDNA.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999;   99WO-US011942.
XX
PR   29-MAY-1998;   98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR   WPI; 2000-072623/06.;
DR   P-PSDB; AAY58220.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 226-227; 264pp; English.
XX
CC   Sequences AAZ55546-Z55551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-i, canine or
CC   feline Flt-3 ligand, canine IL-5, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-13, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targetting
XX
SQ   Sequence 345 BP; 120 A; 68 C; 78 G; 79 T; 0 U; 0 Other;

Query Match   56.6%; Score 345; DB 3; Length 345;
Best Local Similarity   100.0%;   Pred. No. 1.2e-168;
Matches 345; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   86 TTTGCTGTAGAAAAATCCCATGAATAGAGTCGTGGTGGCAGAGACCTTGACACTGCTCTCCACT 145
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60

Qy   146 CATCGGAACTTGGCTGATGAGGCCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 205
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CATCGGAACTTGGCTGATGAGGCCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120

Qy   206 CACCAACTGTGCATTAAAGAGAAGTTTTTCAGGTATAGACACATTGAAGAACCAAAACTGCC 265
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CACCAACTGTGCATTAAAGAGAAGTTTTTCAGGTATAGACACATTGAAGAACCAAAACTGCC 180

Qy   266 CACGGGGGAGGCGTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 325
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CACGGGGGAGGCGTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240

Qy   326 CGCCAAAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAAAGTTCCAGAACTACCTG 385
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 CGCCAAAAAAAAAAAGGTGTGCAGGAGAATGGAGAAGTTCCAGAACTACCTG 300

Qy   386 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 430

Db   301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
            |||||||||||||||||||||||||||||||||||||||||||||

RESULT 7
AAZ55551/c
ID   AAZ55551 standard; cDNA; 345 BP.
XX
AC   AAZ55551;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine mature interleukin-5 (IL-5) cDNA complement.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999;   99WO-US011942.
XX
PR   29-MAY-1998;   98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58220.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 228; 264pp; English.
XX
CC   Sequences AAZ55546-Z55551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-i, canine
CC   feline Flt-3 ligand, canine IL-5, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-13, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targetting
XX
SQ   Sequence 345 BP; 79 A; 78 C; 68 G; 120 T; 0 U; 0 Other;

Query Match   56.6%; Score 345; DB 3; Length 345;
Best Local Similarity   100.0%;   Pred. No. 1.2e-168;
Matches 345; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   86 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 145
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   345 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 286

Qy   146 CATCGGAACTTGGCTGATGAGGCCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 205
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   285 CATCGGAACTTGGCTGATGAGGCCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 226

Qy   206 CACCAACTGTGCATTAAAGAGAAGTTTTTCAGGTATAGACACATTGAAGAACCAAAACTGCC 265

Db 225 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 166
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Qy 266 CACCGGGGAGGCTGTGGATAAAACTAATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 325

Qy 326 CGGCCAAAAAAAAAGGTGTGCAGGAGGAGAAGATGGAGAGAGTGACAAAGTGTTCCTTAGACTACCTG 385
          |||||||||||||||||||||||||||||||||||||
Db 165 CACCGGGGAGGCTGTGGATAAAACTAATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 106

Qy 386 CAAGTATTTCTTGGTGTAATAAACACCGACTGGGACACCGGAAAGT 430
          |||||||||||||||||||||||||||||||||||||||||||||||
Db 45   CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 1

Qy 105 CGGCCAAAAAAAAAGGTGTGCAGGAGGAGAAGATGGAGAGAGTGACAAAGTTTCCTTAGACTACCTG 46

RESULT 8

<pre>
AAF74306
ID   AAF74306 standard; DNA; 393 BP.
XX
AC   AAF74306;
XX
DT   04-MAY-2001 (first entry)
XX
DE   Canine interleukin-5 coding sequence #3.
XX
KW   Dog; interleukin-5; IL-5; allergy; cancer; gene therapy;
KW   inflammatory reaction; ds.
XX
OS   Canis sp.
XX
PN   WO200111049-A2.
XX
PD   15-FEB-2001.
XX
PF   09-AUG-2000; 2000WO-US021651.
XX
PR   10-AUG-1999; 99US-00371615.
XX
PA   (IDEX-) IDEXX LAB INC.
XX
PI   Guo H, Lawton R, Mermer B, Aiyappa AP;
XX
DR   WPI; 2001-191542/19.
XX
PT   Novel canine interleukin 5 polynucleotide and polypeptides are used for
PT   generating antibodies which are useful in treating allergies in dogs.
XX
PS   Claim 1; Page 35; 48pp; English.
XX
CC   The present invention provides the protein and coding sequences of the
CC   canine interleukin-5 (IL-5) protein. This can be used to treat allergies,
CC   cancer and inflammatory reactions in dogs. The present sequence is one
CC   version of the IL-5 coding sequence shown in the specification
XX
SQ   Sequence 393 BP; 128 A; 82 C; 86 G; 97 T; 0 U; 0 Other;
</pre>

Query Match   44.3%;   Score 270;   DB 4;   Length 393;
Best Local Similarity   100.0%;   Pred. No. 1.2e-129;
Matches   270;   Conservative   0;   Mismatches   0;   Indels   0;   Gaps   0;

Qy 131 ACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACT 190
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 ACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACT 60

Qy 191 CCTGAAAATAAAAATCACCAACTCACCGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTG 250
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CCTGAAAATAAAAATCACCAACTCACCGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTG 120

Qy 251 AAGAACCAAAACTGCCCAGCGGGGAGGCTGTGGATAAAACTAATTCCAAAAACTTGTCTTTAATA 310
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 121 AAGAACCAAAACTGCCCACGGGGAGGCTGTGGATAAAACTAATTCCAAAAACTTGTCTTTAATA 180

Qy 311 AAAGAACACATAGAGGCGCCAAAAGGCCCAAAAAAAAAAGGTGTGCAGGAGGAGAAGATGGAGAGTGACAAAG 370
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 181 AAAGAACACATAGAGGCGCCAAAAGGCCCAAAAAAAAAAGGTGTGCAGGAGGAGAAGATGGAGAGTGACAAAG 240

Qy 371 TTCCTAGACTACCTGCAAGTATTTCTTGGT 400
          ||||||||||||||||||||||||||||||
Db 241 TTCCTAGACTACCTGCAAGTATTTCTTGGT 270

RESULT 9

<pre>
AAF74305
ID   AAF74305 standard; DNA; 252 BP.
XX
AC   AAF74305;
XX
DT   04-MAY-2001 (first entry)
XX
DE   Canine interleukin-5 coding sequence #2.
XX
KW   Dog; interleukin-5; IL-5; allergy; cancer; gene therapy;
KW   inflammatory reaction; ds.
XX
OS   Canis sp.
XX
PN   WO200111049-A2.
XX
PD   15-FEB-2001.
XX
PF   09-AUG-2000; 2000WO-US021651.
XX
PR   10-AUG-1999; 99US-00371615.
XX
PA   (IDEX-) IDEXX LAB INC.
XX
PI   Guo H, Lawton R, Mermer B, Aiyappa AP;
XX
DR   WPI; 2001-191542/19.
DR   P-PSDE; AAB72616.
XX
PT   Novel canine interleukin 5 polynucleotide and polypeptides are used for
PT   generating antibodies which are useful in treating allergies in dogs.
XX
PS   Example 1; Fig 1; 48pp; English.
XX
CC   The present invention provides the protein and coding sequences of the
CC   canine interleukin-5 (IL-5) protein. This can be used to treat allergies,
CC   cancer and inflammatory reactions in dogs. The present sequence is one
CC   version of the IL-5 coding sequence shown in the specification
XX
SQ   Sequence 252 BP; 69 A; 54 C; 60 G; 69 T; 0 U; 0 Other;
</pre>

Query Match   41.3%;   Score 252;   DB 4;   Length 252;
Best Local Similarity   100.0%;   Pred. No. 2.7e-120;
Matches   252;   Conservative   0;   Mismatches   0;   Indels   0;   Gaps   0;

Qy   29 ATGAGAAATGCTTCTGAATTTCGAGTTTGCTAGCTCTTCTGGGGCGTGCCCTATGTTTTCTGCCTTT 88
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 ATGAGAAATGCTTCTGAATTTCGAGTTTGCTAGCTCTTCTGGGGCGTGCCCTATGTTTTCTGCCTTT 60

Qy   89 GCTGTAGAAAAATCCCATGAATAGACTGGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 148
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTAGAAAAATCCCATGAATAGACTGGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy 149 CGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 208
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 121 CGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180

Qy 209 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 268
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 181 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240

Qy 269 GGGGAGGCTGTG 280
          ||||||||||||

Db   241 GGGGAGGCTGTG 252

RESULT 10
ID   AATS50756 standard; cDNA; 399 BP.
XX
AC   AATS50756;
XX
DT   17-OCT-2003 (revised)
DT   24-SEP-1997 (first entry)
XX
DE   Ovine IL-5 cDNA.
XX
KW   Cytokine; ovine; sheep; interleukin-5; interleukin-12; IL-5; IL-12;
KW   livestock; cow; stress; transport; vaccine adjuvant; veterinary; cancer;
KW   immunosuppression; allergy; reproductive system; growth; early maturity;
KW   antibody; diagnosis; immunopotentiator;
KW   early haematopoietic progenitor cell; cytotoxic cell; thymocyte;
KW   secretion; IgM; IgA; bacterial endotoxin; gamma-interferon; ss.
XX
OS   Ovis aries.
XX
XX
PN   WO9700321-A1.
XX
PD   03-JAN-1997.
XX
PF   14-JUN-1996; 96WO-AU000360.
XX
PR   14-JUN-1995; 95AU-00003502.
PR   27-OCT-1995; 95AU-0006244.
XX
PA   (CSIR) COMMONWEALTH SCI & IND RES ORG.
XX
PI   Seow H, Wood P;
XX
DR   WPI; 1997-077528/07.
DR   P-PSDB; AAW08479.
XX
PT   Nucleic acid encoding ovine interleukin-5 or -12 - used as vaccine
PT   adjuvants and to treat or prevent microbial infections in livestock.
XX
PS   Claim 6; Page 41-42; 78pp; English.
XX
CC   The sequences given in AATS50755-56 encode ovine interleukin-5 (IL-5).
CC   Ovine IL-5 or IL-12 are used to treat and/or prevent infections in
CC   livestock (esp. cows and sheep), particularly where the animals are
CC   stressed, e.g. during transport. IL-5 and IL-12 can also be used as
CC   adjuvants in vaccines for veterinary use (partic. weakly immunogenic
CC   subunit or synthetic peptide vaccines). They may also be used to treat
CC   cancer, immunosuppression and allergy, to enhance/suppress the
CC   reproductive system and to promote growth or early maturity. Optionally
CC   interleukin can be delivered from constructs or delivery cells and
CC   antibodies are useful in enzyme immunoassays for rapid diagnosis of
CC   infection. The interleukins are immunopotentiators, especially IL-5
CC   promotes growth of early haematopoietic progenitor cells and generation
CC   of cytotoxic cells from thymocytes, also it stimulates production and
CC   secretion of IgM and IgA (in synergism with bacterial endotoxin). The
CC   interleukin IL-5 also induces production of gamma-interferon by, and
CC   induces production of gamma-interferon by, and proliferation of, T and NK
CC   cells and increases the (non-)specific cytolytic lymphocyte response. The
CC   genetic constructs can also be used for in vitro production of IL-5 or -
CC   12. (Updated on 17-OCT-2003 to standardise OS field)
XX
SQ   Sequence 399 BP; 130 A; 77 C; 93 G; 99 T; 0 U; 0 Other;

Qy   Query Match   7.0%;   Score 43; DB 2; Length 399;
     Best Local Similarity 100.0%; Pred. No. 1.3e-11;
     Matches   43;   Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   102 CCATGAANTAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCAC 144
              |||||||||||||||||||||||||||||||||||||||||||||
Db   68 CCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCAC 110

RESULT 11
ID   AATS50755 standard; DNA; 520 BP.
XX
AC   AATS50755;
XX
DT   17-OCT-2003 (revised)
DT   24-SEP-1997 (first entry)
XX
DE   Ovine IL-5 gene.
XX
KW   Cytokine; ovine; sheep; interleukin-5; interleukin-12; IL-5; IL-12;
KW   livestock; cow; stress; transport; vaccine adjuvant; veterinary; cancer;
KW   immunosuppression; allergy; reproductive system; growth; early maturity;
KW   antibody; diagnosis; immunopotentiator;
KW   early haematopoietic progenitor cell; cytotoxic cell; thymocyte;
KW   secretion; IgM; IgA; bacterial endotoxin; gamma-interferon; ss.
XX
OS   Ovis aries.
XX
FH   Key   Location/Qualifiers
FT   CDS   46..444
FT   /*tag= a
FT   /product= "Ovine_IL-5"
FT   exon   46..183
FT   /*tag= b
FT   /number=1
FT   exon   184..216
FT   /*tag= c
FT   /number= 2
FT   exon   217..345
FT   /*tag= d
FT   /number= 3
FT   exon   346..480
FT   /*tag= e
FT   /number= 4
XX
XX
PN   WO9700321-A1.
XX
PD   03-JAN-1997.
XX
PF   14-JUN-1996; 96WO-AU000360.
XX
PR   14-JUN-1995; 95AU-00003502.
PR   27-OCT-1995; 95AU-0006244.
XX
PA   (CSIR) COMMONWEALTH SCI & IND RES ORG.
XX
PI   Seow H, Wood P;
XX
DR   WPI; 1997-077528/07.
DR   P-PSDB; AAW08479.
XX
PT   Nucleic acid encoding ovine interleukin-5 or -12 - used as vaccine
PT   adjuvants and to treat or prevent microbial infections in livestock.
XX
PS   Claim 6; Page 39-40; 78pp; English.
XX
CC   The sequences given in AATS50755-56 encode ovine interleukin-5 (IL-5).
CC   Ovine IL-5 or IL-12 are used to treat and/or prevent infections in
CC   livestock (esp. cows and sheep), particularly where the animals are
CC   stressed, e.g. during transport. IL-5 and IL-12 can also be used as
CC   adjuvants in vaccines for veterinary use (partic. weakly immunogenic
CC   subunit or synthetic peptide vaccines). They may also be used to treat
CC   cancer, immunosuppression and allergy, to enhance/suppress the
CC   reproductive system and to promote growth or early maturity. Optionally
CC   interleukin can be delivered from constructs or delivery cells and
CC   antibodies are useful in enzyme immunoassays for rapid diagnosis of
CC   infection. The interleukins are immunopotentiators, especially IL-5
CC   promotes growth of early haematopoietic progenitor cells and generation
CC   of cytotoxic cells from thymocytes, also it stimulates production and
CC   secretion of IgM and IgA (in synergism with bacterial endotoxin). IL-12

```
CC   induces production of gamma-interferon by, and proliferation of, T and NK
CC   cells and increases the (non-)specific cytolytic lymphocyte response. The
CC   genetic constructs can also be used for in vitro production of IL-5 or -
CC   12. (Updated on 17-OCT-2003 to standardise OS field)
XX
SQ   Sequence 520 BP; 166 A; 99 C; 124 G; 131 T; 0 U; 0 Other;

Qy          Query Match    7.0%;  Score 43;  DB 2;  Length 520;
            Best Local Similarity  100.0%;  Pred. No. 1.3e-11;
            Matches  43;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy      102 CCATGAATAGAACTGGTGGGCGAGAGAGACCTTGACACTGCTCTCCAC 144
            |||||||||||||||||||||||||||||||||||||||||||||
Db      113 CCATGAATAGACTGGTGGGCGAGAGACCTTGACACTGCTCTCCAC 155


RESULT 12
ID   AAZ44265 standard; DNA; 838 BP.
XX
AC   AAZ44265;
XX
DT   31-MAR-2000  (first entry)
XX
DE   Porcine IL-5 DNA.
XX
KW   Pig; vaccine; cysticercosis; protective antigen; cC1; cC3; cC4;
KW   tenial cysticercus; gamma interferon; IFN-gamma; interleukin 5; IL-5; 88.
XX
OS   Sus scrofa.
XX
PN   CN1231339-A.
XX
PD   13-OCT-1999.
XX
PF   29-JAN-1999; 99CN-0013447.
PR   29-JAN-1999; 99CN-0013447.
XX
PA   (UIYW-) UNIV NO 2 MILITARY MEDICAL PLA.
PI   Sun S, Dai J;
XX
DR   WPI; 2000-087904/08.
XX
PT   Nucleic acid vaccine for cysticercosis co-contracted by human and pig.
XX
PS   Claim 3; Page 9; 21pp; Chinese.
XX
CC   This invention describes a novel nucleic acid vaccine for preventing and
CC   curing human and pork cysticercosis. The invention involves the formation
CC   of a eukaryotic expression plasmid from fusion transcript expression unit
CC   consisting of three protective antigen genes (cC1, cC3 and cC4) of pig
CC   tenial cysticercus and coexpression unit of related cell factor gamma
CC   interferon (IFN-gamma) and pork interleukin 5 (IL-5) genes. The
CC   production and purification process of said nucleic acid vaccine is
CC   simple and convenient, the physical and chemical properties of the
CC   vaccine are stable, and the vaccine is easy to store and transport, and
CC   possesses effective immunological protective function for human and pig
CC   cysticercosis. This sequence represents the pig IL-5 gene used in the
CC   method of the invention
XX
SQ   Sequence 838 BP; 280 A; 148 C; 171 G; 239 T; 0 U; 0 Other;

Qy          Query Match    6.7%;  Score 41;  DB 3;  Length 838;
            Best Local Similarity  100.0%;  Pred. No. 1.5e-10;
            Matches  41;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy       45 ATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCC 85
            |||||||||||||||||||||||||||||||||||||||||
Db       61 ATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCC 101


RESULT 13
ID   AAQ57191 standard; mRNA; 27 BP.
XX
AC   AAQ57191;
XX
DT   25-MAR-2003  (revised)
DT   26-JUL-1994  (first entry)
XX
DE   Enzymatic RNA molecule IL-5 mRNA target sequence.
XX
KW   Interleukin-5; specific; cleavage; target RNA; protein; expression;
KW   inhibitor; inhibition; ribozyme; treatment; prophylaxis; prevention;
KW   psoriasis; asthma; inflammatory diseases; restenosis;
KW   cardiovascular condition; hypertension; arthritis; 88.
XX
OS   Synthetic.
XX
PN   WO9402595-A1.
XX
PD   03-FEB-1994.
XX
PF   02-JUL-1993; 93WO-US006316.
XX
PR   17-JUL-1992; 92US-00916763.
PR   07-DEC-1992; 92US-00987132.
PR   07-DEC-1992; 92US-00989848.
PR   07-DEC-1992; 92US-00989849.
PR   19-JAN-1993; 93US-00008895.
XX
PA   (RIBO-) RIBOZYME PHARM INC.
XX
PI   Sullivan SM, Draper KG;
XX
DR   WPI; 1994-048853/06.
XX
PT   Enzymatic RNA molecules which cleave mRNA - used to treat or prevent
PT   inflammatory, arthritic, stenotic or cardiovascular diseases or
PT   conditions.
XX
PS   Claim 3; Page 17; 65pp; English.
XX
CC   This is an IL-5 mRNA target sequence (nucleotide no. 61) of an enzymatic
CC   RNA molecule (ribozyme) which cleaves mRNA associated with the
CC   development or maintenance of a psoriatic or asthmatic condition. The
CC   conc. of the ribozyme necessary to effect a therapeutic treatment is
CC   lower than that of an antisense oligonucleotide and the specificity of
CC   action is higher. (Updated on 25-MAR-2003 to correct PN field.)
XX
SQ   Sequence 27 BP; 4 A; 4 C; 8 G; 11 T; 0 U; 0 Other;

Qy          Query Match    3.6%;  Score 22;  DB 2;  Length 27;
            Best Local Similarity  100.0%;  Pred. No. 1;
            Matches  22;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy       45 ATTTGAGTTTGCTAGCTCTTGG 66
            ||||||||||||||||||||||
Db        1 ATTTGAGTTTGCTAGCTCTTGG 22


RESULT 14
ID   AAZ55592/c
ID   AAZ55592 standard; DNA; 32 BP.
XX
AC   AAZ55592;
XX
DT   14-MAR-2000  (first entry)
XX
DE   Canine IL-5 antisense PCR primer, SEQ ID NO:138.
XX
KW   Interleukin; IL-4; IL-5; Flt-3 ligand; CD40; CD40 ligand; CD154;
KW   interferon-alpha; IFN-alpha; GMCSF; antibody; canine; feline;
KW   granulocyte macrophage colony-stimulating factor; inhibitor;
```

KW   immune response; immunoregulation; tumour; cancer; autoimmune disease;
KW   vaccine; PCR; primer; ss.
XX
OS   Synthetic.
OS   Canis familiaris.
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999;   99WO-US011942.
XX
PR   29-MAY-1998;   98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wondering RS;
XX
PS   Example 5B; Page 107; 264pp; English.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
DR   WPI; 2000-072623/06.
XX

CC   The invention relates to canine interleukin-4 (IL-4), canine or feline
CC   Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha),
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targetting. Sequences AA255491-255498, AA255513-255515 and AA255581-
CC   255608 represent PCR primers used in isolation, amplification and cloning
CC   of cDNAs encoding the immunoregulatory proteins of the invention
XX
SQ   Sequence 32 BP; 3 A; 15 C; 7 G; 7 T; 0 U; 0 Other;

Query Match   3.6%; Score 22; DB 3; Length 32;
Best Local Similarity   100.0%; Pred. No. 1;
Matches   22; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   413 GAGTGGACACCGGAAAGTTGAG 434
              ||||||||||||||||||||||
Db   32 GAGTGGACACCGGAAAGTTGAG 11

RESULT 15
ID   AAX54641 standard; DNA; 89 BP.
XX
AC   AAX54641;
XX
DT   05-JUL-1999 (first entry)
XX
DE   Human IL-5 antisense oligonucleotide fragment.
XX
KW   Antisense oligonucleotide; multiple target; antisense treatment;
KW   impaired respiration; inflammation; lung disease;
KW   pulmonary vasoconstriction; inflammation; allergic rhinitis;
KW   acute asthma; allergy; impeded respiration;
KW   respiratory distress syndrome; pain; cystic fibrosis;
KW   pulmonary hypertension; pulmonary vasoconstriction; emphysema;
KW   chronic obstructive pulmonary disease; leukemia; lymphoma; carcinoma;
KW   colon cancer; breast cancer; lung cancer; pancreatic cancer;
KW   hepatocellular carcinoma; kidney cancer; melanoma; hepatic metastasis;
KW   prostate cancer; ss.
XX
OS   Synthetic.
XX
PN   WO9913886-A1.
XX
PD   25-MAR-1999.
XX
PF   17-SEP-1998;   98WO-US019419.
XX
PR   17-SEP-1997;   97US-0059160P.
PR   09-JUN-1998;   98US-00093972.
XX
PA   (UYEC-) UNIV EAST CAROLINA.
XX
PI   Nyce JW;
XX
DR   WPI; 1999-229400/19.
XX
PS   Disclosure; Page 49; 120pp; English.
XX

CC   The specification describes antisense oligonucleotides (AAX52869-X55271)
CC   directed against at least 2 mRNAs selected from target genes, coding and
CC   non-coding regions of RNAs corresponding to target genes, gene initiation
CC   codons, genomic flanking regions, intron-exon borders, the 5'-end, the 3'
CC   -end and the juxta-section between coding and non-coding regions and all
CC   segments of RNAs encoding proteins associated with one or more diseases,
CC   conditions or mixtures. The antisense oligonucleotides may be derived
CC   from sequences AAX52272-74. These multiple target oligonucleotides
CC   (specifically AAX55180-271) can be used for the antisense treatment of
CC   diseases and conditions. Typical diseases and conditions are those
CC   associated with impaired respiration and inflammation, including lung
CC   diseases, pulmonary vasoconstriction, inflammation, allergic rhinitis,
CC   acute asthma, allergies, asthma, impeded respiration, respiratory
CC   distress syndrome, pain, cystic fibrosis, pulmonary hypertension,
CC   pulmonary vasoconstriction, emphysema, chronic obstructive pulmonary
CC   disease (COPD), and cancers such as leukemias, lymphomas, carcinomas e.g.
CC   colon cancer, breast cancer, lung cancer, pancreatic cancer,
CC   hepatocellular carcinoma, kidney cancer, melanoma, hepatic metastases, as
CC   well as all types of cancers which may metastasize or have metastasized
CC   to the lungs, including breast and prostate cancer
XX
SQ   Sequence 89 BP; 25 A; 20 C; 25 G; 18 T; 0 U; 1 Other;

Query Match   3.6%; Score 22; DB 2; Length 89;
Best Local Similarity   100.0%; Pred. No. 1.1;
Matches   22; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   45 ATTTGAGTTTGCTAGCTCTTGG 66
              ||||||||||||||||||||||
Db   61 ATTTGAGTTTGCTAGCTCTTGG 40

Search completed: August 8, 2005, 16:37:39
Job time : 410.892 secs

OM nucleic - nucleic search, using sw model

GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

Run on: August 8, 2005, 05:12:23 ; Search time 501.96 Seconds
(without alignments)
7877.554 Million cell updates/sec

Title: US-10-787-382-4
Perfect score: 610
Sequence: 1 caaggcaaacactgaacatt...............acagatgaaatatattgag 610

Scoring table: OLIGO_NUC
Gapop 60.0 , Gapext 60.0

Searched: 7297361 seqs, 3241162794 residues

Word size : 0

Total number of hits satisfying chosen parameters: 14594722

Post-processing: Listing first 45 summaries

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Database : Published Applications_NA:*

1: /cgn2_6/ptodata/1/pubpna/US07_PUBCOMB.seq:*
2: /cgn2_6/ptodata/1/pubpna/US06_NEW_PUB.seq:*
3: /cgn2_6/ptodata/1/pubpna/PCT_NEW_PUB.seq:*
4: /cgn2_6/ptodata/1/pubpna/US06_PUBCOMB.seq:*
5: /cgn2_6/ptodata/1/pubpna/US07_NEW_PUB.seq:*
6: /cgn2_6/ptodata/1/pubpna/PCTUS_PUBCOMB.seq:*
7: /cgn2_6/ptodata/1/pubpna/US08_NEW_PUB.seq:*
8: /cgn2_6/ptodata/1/pubpna/US08_PUBCOMB.seq:*
9: /cgn2_6/ptodata/1/pubpna/US09A_PUBCOMB.seq:*
10: /cgn2_6/ptodata/1/pubpna/US09B_PUBCOMB.seq:*
11: /cgn2_6/ptodata/1/pubpna/US09C_PUBCOMB.seq:*
12: /cgn2_6/ptodata/1/pubpna/US09_NEW_PUB.seq:*
13: /cgn2_6/ptodata/1/pubpna/US10A_PUBCOMB.seq:*
14: /cgn2_6/ptodata/1/pubpna/US10B_PUBCOMB.seq:*
15: /cgn2_6/ptodata/1/pubpna/US10C_PUBCOMB.seq:*
16: /cgn2_6/ptodata/1/pubpna/US10D_PUBCOMB.seq:*
17: /cgn2_6/ptodata/1/pubpna/US10F_PUBCOMB.seq:*
18: /cgn2_6/ptodata/1/pubpna/US10G_PUBCOMB.seq:*
19: /cgn2_6/ptodata/1/pubpna/US10H_PUBCOMB.seq:*
20: /cgn2_6/ptodata/1/pubpna/US10I_PUBCOMB.seq:*
21: /cgn2_6/ptodata/1/pubpna/US10J_PUBCOMB.seq:*
22: /cgn2_6/ptodata/1/pubpna/US10_NEW_PUB.seq:*
23: /cgn2_6/ptodata/1/pubpna/US11_NEW_PUB.seq:*
24: /cgn2_6/ptodata/1/pubpna/US60_NEW_PUB.seq:*
25: /cgn2_6/ptodata/1/pubpna/US60_PUBCOMB.seq:*
26: /cgn2_6/ptodata/1/pubpna/US60_PUBCOMB.seq:*

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	610	100.0	610	9	US-09-755-633-4	Sequence 4, Appli
2	610	100.0	610	14	US-09-755-633-6	Sequence 6, Appli
3	610	100.0	610	14	US-10-218-654-80	Sequence 80, Appl
4	610	100.0	610	15	US-10-218-654-82	Sequence 82, Appl
5	610	100.0	610	15	US-10-262-439-80	Sequence 80, Appl
6	610	100.0	610	15	US-10-262-439-82	Sequence 82, Appl
7	610	100.0	610	19	US-10-787-382-4	Sequence 4, Appli

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

c	8	610	100.0	610	19	US-10-787-382-6	Sequence 6, Appli
c	9	402	65.9	402	9	US-09-755-633-7	Sequence 7, Appli
c	10	402	65.9	402	9	US-09-755-633-8	Sequence 8, Appli
c	11	402	65.9	402	14	US-10-218-654-83	Sequence 83, Appl
c	12	402	65.9	402	14	US-10-218-654-84	Sequence 84, Appl
c	13	402	65.9	402	15	US-10-262-439-83	Sequence 83, Appl
c	14	402	65.9	402	15	US-10-262-439-84	Sequence 84, Appl
c	15	402	65.9	402	19	US-10-787-382-7	Sequence 7, Appli
c	16	402	65.9	402	19	US-10-787-382-8	Sequence 8, Appli
c	17	345	56.6	345	9	US-09-755-633-9	Sequence 9, Appli
c	18	345	56.6	345	9	US-09-755-633-11	Sequence 11, Appl
c	19	345	56.6	345	14	US-10-218-654-85	Sequence 85, Appl
c	20	345	56.6	345	14	US-10-218-654-87	Sequence 87, Appl
c	21	345	56.6	345	15	US-10-262-439-85	Sequence 85, Appl
c	22	345	56.6	345	15	US-10-262-439-87	Sequence 87, Appl
c	23	345	56.6	345	19	US-10-787-382-9	Sequence 9, Appli
c	24	345	56.6	345	19	US-10-787-382-11	Sequence 11, Appl
c	25	299	49.0	671	9	US-09-755-633-13	Sequence 13, Appl
c	26	299	49.0	671	19	US-10-787-382-13	Sequence 13, App
c	27	170	27.9	1658	19	US-10-787-382-18	Sequence 18, Appl
c	28	170	27.9	1658	19	US-10-787-382-21	Sequence 21, Appl
c	29	139	22.8	1658	9	US-09-755-633-18	Sequence 18, Appl
c	30	139	22.8	1658	9	US-09-755-633-19	Sequence 19, Appl
c	31	139	22.8	1658	19	US-10-787-382-19	Sequence 19, Appl
c	32	32	3.6	32	9	US-09-755-633-13	Sequence 13, Appl
c	32	32	3.6	32	14	US-10-218-654-138	Sequence 138, App
c	32	32	3.6	32	14	US-10-218-654-138	Sequence 138, App
c	33	32	3.6	32	15	US-10-262-439-138	Sequence 138, App
c	34	32	3.6	32	19	US-10-787-382-13	Sequence 13, Appl
c	35	22	3.6	459	22	US-10-191-997-90	Sequence 90, Appl
c	36	22	3.6	816	17	US-10-641-643-1236	Sequence 1236, Ap
c	36	22	3.6	816	18	US-10-929-182-4	Sequence 4, Appli
c	37	22	3.6	816	21	US-10-787-382-13	Sequence 13, Appl
c	38	22	3.6	816	22	US-09-800-629A-78	Sequence 78, Appl
c	39	22	3.6	3230	9	US-09-800-629A-78	Sequence 78, Appl
c	40	22	3.6	3230	19	US-10-880-101A-87	Sequence 87, Appl
c	41	22	3.6	3230	19	US-10-679-532-78	Sequence 78, Appl
c	42	22	3.6	3241	22	US-10-880-101A-89	Sequence 89, Appl
c	43	22	3.6	3241	22	US-10-880-101A-91	Sequence 91, Appl
c	44	21	3.4	26	9	US-10-789-522-81	Sequence 81, Appl
c	45	21	3.4	36	9	US-09-755-633-12	Sequence 12, Appl

ALIGNMENTS

RESULT 1
US-09-755-633-4
Sequence 4, Application US/09755633
Patent No. US20020127200A1

GENERAL INFORMATION:

APPLICANT: Yang, Shumin
APPLICANT: McCall, Catherine A.
APPLICANT: Weber, Eric R.
TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
FILE REFERENCE: IM-2-C1-C1
CURRENT APPLICATION NUMBER: US/09/755,633
CURRENT FILING DATE: 2001-01-05
PRIOR APPLICATION NUMBER: 09/322,409
PRIOR FILING DATE: 1999-05-28
PRIOR APPLICATION NUMBER: 60/087,306
PRIOR FILING DATE: 1998-05-29
NUMBER OF SEQ ID NOS: 21
SOFTWARE: Patentin Ver. 2.1

SEQ ID NO 4
LENGTH: 610
TYPE: DNA
ORGANISM: Canis familiaris
FEATURE:
NAME/KEY: CDS
LOCATION: (29)..(430)

Query Match 100.0%; Score 610; DB 9; Length 610;
Best Local Similarity 100.0%; Pred. No. 0;

Matches 610; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy      1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60

Qy     61 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATAGAAGACTGGTTGGC 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATAGAAGACTGGTTGGC 120

Qy    121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGAT 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGAT 180

Qy    181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 240
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 240

Qy    241 AGACACATTGAAGAACCAAACTGCCCACGGGGGAGGCTGTGGATAAACTATTCCAAAACTT 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 AGACACATTGAAGAACCAAACTGCCCACGGGGGAGGCTGTGGATAAACTATTCCAAAACTT 300

Qy    301 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAAAGGTGTGCAGGAGGAAAGATGGAG 360
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAAAGGTGTGCAGGAGGAAAGATGGAG 360

Qy    361 AGTGACAAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGGAC 420
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    361 AGTGACAAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGGAC 420

Qy    421 ACCGGAAAGTTGAGGAACAAACCGGCTTATTGTGTAGTGGAAGAGAATGGTTT 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    421 ACCGGAAAGTTGAGGAACAAACCGGCTTATTGTGTAGTGGAAGAGAATGGTTT 480

Qy    481 TTTGGGCGGATGAGAATGAGGGGCCAACCAACAGTAGGGGACTTAATGGCCAGTATAACTAAGC 540
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    481 TTTGGGCGGATGAGAATGAGGGGCCAACCAACAGTAGGGGACTTAATGGCCAGTATAACTAAGC 540

Qy    541 TTCAGAGACAAAAGTAAAATATTTCAGGCCATCCTACTACTTTATCACTTCACACAGATGAAA 600
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    541 TTCAGAGACAAAAGTAAAATATTTCAGGCCATCCTACTACTTTATCACTTCACACAGATGAAA 600

Qy    601 TATATTTGAG 610
          ||||||||||
Db    601 TATATTTGAG 610
```

Query Match 100.0%; Score 610; DB 9; Length 610;

RESULT 2
US-09-755-633-6/c
Sequence 6, Application US/0975563
Patent No. US2002012700A1
GENERAL INFORMATION:
APPLICANT: Yang, Shumin
APPLICANT: McCall, Catherine A.
APPLICANT: Weber, Eric R.
TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
FILE REFERENCE: IM-2-C1-C1
CURRENT APPLICATION NUMBER: US/09/755,633
CURRENT FILING DATE: 2001-01-05
PRIOR APPLICATION NUMBER: 09/322,409
PRIOR FILING DATE: 1999-05-28
PRIOR APPLICATION NUMBER: 60/087,306
PRIOR FILING DATE: 1998-05-29
NUMBER OF SEQ ID NOS: 21
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 6
LENGTH: 610
TYPE: DNA
ORGANISM: Canis familiaris
US-09-755-633-6

Best Local Similarity 100.0%; Pred. No. 0;
Matches 610; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy      1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    610 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 551

Qy     61 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATAGAAGACTGGTTGGC 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    550 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATAGAAGACTGGTTGGC 491

Qy    121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGAT 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    490 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGAT 431

Qy    181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 240
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    430 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 371

Qy    241 AGACACATTGAAGAACCAAACTGCCCACGGGGGAGGCTGTGGATAAACTATTCCAAAACTT 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    370 AGACACATTGAAGAACCAAACTGCCCACGGGGGAGGCTGTGGATAAACTATTCCAAAACTT 311

Qy    301 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAAAGGTGTGCAGGAGGAAAGATGGAG 360
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    310 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAAAGGTGTGCAGGAGGAAAGATGGAG 251

Qy    361 AGTGACAAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGGAC 420
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    250 AGTGACAAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGGAC 191

Qy    421 ACCGGAAAGTTGAGGAACAAACCGGCTTATTGTGTAGTGGAAGAGAATGGTTT 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    190 ACCGGAAAGTTGAGGAACAAACCGGCTTATTGTGTAGTGGAAGAGAATGGTTT 131

Qy    481 TTTGGGCGGATGAGAATGAGGGGCCAACCAACAGTAGGGGACTTAATGGCCAGTATAACTAAGC 540
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    130 TTTGGGCGGATGAGAATGAGGGGCCAACCAACAGTAGGGGACTTAATGGCCAGTATAACTAAGC 71

Qy    541 TTCAGAGACAAAAGTAAAATATTTCAGGCCATCCTACTACTTTATCACTTCACACAGATGAAA 600
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     70 TTCAGAGACAAAAGTAAAATATTTCAGGCCATCCTACTACTTTATCACTTCACACAGATGAAA 11

Qy    601 TATATTTGAG 610
          ||||||||||
Db     10 TATATTTGAG 1
```

RESULT 3
US-10-218-654-80
Sequence 80, Application US/10218654
Publication No. US20030099609A1
GENERAL INFORMATION:
APPLICANT: Yang, Shumin
APPLICANT: Sim, Gek-Kee
APPLICANT: Dreitz, Matthew J.
APPLICANT: Wonderling, Ramani S.
TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
FILE REFERENCE: IM-2-C1
CURRENT APPLICATION NUMBER: US/10/218,654
CURRENT FILING DATE: 2002-08-13
PRIOR APPLICATION NUMBER: US/09/322,409
PRIOR FILING DATE: 1999-05-28
PRIOR APPLICATION NUMBER: 60/087,306
PRIOR FILING DATE: 1998-05-29
NUMBER OF SEQ ID NOS: 154
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 80
LENGTH: 610
TYPE: DNA
ORGANISM: Canis familiaris
FEATURE:

```
; NAME/KEY: CDS
; LOCATION: (29)...(430)
US-10-218-654-80

Query Match         100.0%;  Score 610;  DB 14;  Length 610;
Best Local Similarity   100.0%;  Pred. No. 0;  Mismatches 0;
Matches 610;  Conservative 0;  Mismatches 0;  Indels 0;  Gaps 0;

Qy      1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60

Qy     61 TCTTGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 TCTTGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC 120

Qy    121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTGGACTTGGCTGATAGGCGGAACCTGAT 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTGGACTTGGCTGATAGGCGGAACCTGAT 180

Qy    181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 240

Qy    241 AGACACATTGAAGAACCAAAACTGCCCACGGGGGGAGGCTGTGGATAAACTATTCCAAAACTT 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 AGACACATTGAAGAACCAAAACTGCCCACGGGGGGAGGCTGTGGATAAACTATTCCAAAACTT 300

Qy    301 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 360

Qy    361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATATTTCTTGGTGTAATAAACACCGAGTGGAC 420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATATTTCTTGGTGTAATAAACACCGAGTGGAC 420

Qy    421 ACCGGAAAAGTTGAGAACAAAACCGGCTTATTGTAGTGGAAGAGATTTTGGGAGAATGGTTT 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    421 ACCGGAAAAGTTGAGAACAAAACCGGCTTATTGTAGTGGAAGAGATTTTGGGAGAATGGTTT 480

Qy    481 TTTGGGCCATGACGAAATGAGGGGCCCAACCAACCAGTAGGGGGACTTAACTAAGC 540
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    481 TTTGGGCCATGACGAAATGAGGGGCCCAACCAACCAGTAGGGGGACTTAACTAAGC 540

Qy    541 TTCAGAGACAAAGTAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    541 TTCAGAGACAAAGTAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600

Qy    601 TATATTTGAG 610
          ||||||||||
Db    601 TATATTTGAG 610
```

```
; SEQ ID NO 82
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-218-654-82

Query Match         100.0%;  Score 610;  DB 14;  Length 610;
Best Local Similarity   100.0%;  Pred. No. 0;  Mismatches 0;
Matches 610;  Conservative 0;  Mismatches 0;  Indels 0;  Gaps 0;

Qy      1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    610 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 551

Qy     61 TCTTGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    550 TCTTGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC 491

Qy    121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTGGACTTGGCTGATAGGCGGAACCTGAT 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    490 AGAGACCTTGACACTGCTCTCCACTCATCGAACTGGACTTGGCTGATAGGCGGAACCTGAT 431

Qy    181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    430 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 371

Qy    241 AGACACATTGAAGAACCAAAACTGCCCACGGGGGGAGGCTGTGGATAAACTATTCCAAAACTT 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    370 AGACACATTGAAGAACCAAAACTGCCCACGGGGGGAGGCTGTGGATAAACTATTCCAAAACTT 311

Qy    301 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    310 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 251

Qy    361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATATTTCTTGGTGTAATAAACACCGAGTGGAC 420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    250 AGTGACAAAGTTCCTAGACTACCTGCAAGTATATTTCTTGGTGTAATAAACACCGAGTGGAC 191

Qy    421 ACCGGAAAAGTTGAGAACAAAACCGGCTTATTGTAGTGGAAGAGATTTTGGGAGAATGGTTT 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    190 ACCGGAAAAGTTGAGAACAAAACCGGCTTATTGTAGTGGAAGAGATTTTGGGAGAATGGTTT 131

Qy    481 TTTGGGCCATGACGAAATGAGGGGCCCAACCAACCAGTAGGGGGACTTAACTAAGC 540
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    130 TTTGGGCCATGACGAAATGAGGGGCCCAACCAACCAGTAGGGGGACTTAACTAAGC 71

Qy    541 TTCAGAGACAAAGTAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     70 TTCAGAGACAAAGTAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 11

Qy    601 TATATTTGAG 610
          ||||||||||
Db     10 TATATTTGAG 1
```

PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 80
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (29)..(430)
; US-10-262-439-80

Query Match   100.0%; Score 610; DB 15; Length 610;
Best Local Similarity 100.0%; Pred No. 0;
Matches   610; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

```
Qy      1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTGAATTTGCTAGC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTGAATTTGCTAGC 60

Qy     61 TCTTGGGGGCTGCCTATGTTTCTGCCTTTGCTGTGTAGAAAATAGACTGGTGGC 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 TCTTGGGGGCTGCCTATGTTTCTGCCTTTGCTGTGTAGAAAATAGACTGGTGGC 120

Qy    121 AGAGACCTTGACACTGCCTCTCCACTCATCCGAACTCGGTGGA 180
          |||||||||||||||||||||||||||||||||||||||||||
Db    121 AGAGACCTTGACACTGCCTCTCCACTCATCCGAACTCGGTGGA 180

Qy    181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGT 240
          |||||||||||||||||||||||||||||||||||
Db    181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGT 240

Qy    241 AGACACATTGAAGAACCAAACTGCCCACGGGGAGGAG 300
          |||||||||||||||||||||||||||||||||||||
Db    241 AGACACATTGAAGAACCAAACTGCCCACGGGGAGGAG 300

Qy    301 GTCTTTAATAAAAGAACACATAGAGCGCCAAAAAAAG 360
          |||||||||||||||||||||||||||||||||||||
Db    301 GTCTTTAATAAAAGAACACATAGAGCGCCAAAAAAAG 360

Qy    361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTT 420
          |||||||||||||||||||||||||||||||||||||
Db    361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTT 420

Qy    421 ACCGGAAAGTTGAGAACAAACCGGGCTTATTGTAGTG 480
          |||||||||||||||||||||||||||||||||||||
Db    421 ACCGGAAAGTTGAGAACAAACCGGGCTTATTGTAGTG 480

Qy    481 TTTGGCGATGAGAATGAGGGCCAACCAACAGTAGGGG 540
          |||||||||||||||||||||||||||||||||||||
Db    481 TTTGGCGATGAGAATGAGGGCCAACCAACAGTAGGGG 540

Qy    541 TTCAGAGACAAAGTAAATATTTCAGGCATCCTACTAC 600
          |||||||||||||||||||||||||||||||||||||
Db    541 TTCAGAGACAAAGTAAATATTTCAGGCATCCTACTAC 600

Qy    601 TATATTTGAG 610
          ||||||||||
Db    601 TATATTTGAG 610
```

RESULT 6
US-10-262-439-82/c
; Sequence 82, Application US/10262439
; Publication No. US20030143196A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
  ACID MOLECULES, AND USES THEREOF

; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/10/262,439
; CURRENT FILING DATE: 2002-09-30
; PRIOR APPLICATION NUMBER: US/09/451,527
; PRIOR FILING DATE: 1999-11-30
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 82
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; US-10-262-439-82

Query Match   100.0%; Score 610; DB 15; Length 610;
Best Local Similarity 100.0%; Pred No. 0;
Matches   610; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

```
Qy      1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTGAATTTGCTAGC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    610 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTGAATTTGCTAGC 551

Qy     61 TCTTGGGGGCTGCCTATGTTTCTGCCTTTGCTGTGTAGAAAATAGACTGGTGGC 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    550 TCTTGGGGGCTGCCTATGTTTCTGCCTTTGCTGTGTAGAAAATAGACTGGTGGC 491

Qy    121 AGAGACCTTGACACTGCCTCTCCACTCATCCGAACTCGGTGGA 180
          |||||||||||||||||||||||||||||||||||||||||||
Db    490 AGAGACCTTGACACTGCCTCTCCACTCATCCGAACTCGGTGGA 431

Qy    181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGT 240
          |||||||||||||||||||||||||||||||||||
Db    430 GATTCCTACTCCTGAAAATAAAAATCACCAACTGT 371

Qy    241 AGACACATTGAAGAACCAAACTGCCCACGGGGAGGAG 300
          |||||||||||||||||||||||||||||||||||||
Db    370 AGACACATTGAAGAACCAAACTGCCCACGGGGAGGAG 311

Qy    301 GTCTTTAATAAAAGAACACATAGAGCGCCAAAAAAAG 360
          |||||||||||||||||||||||||||||||||||||
Db    310 GTCTTTAATAAAAGAACACATAGAGCGCCAAAAAAAG 251

Qy    361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTT 420
          |||||||||||||||||||||||||||||||||||||
Db    250 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTT 191

Qy    421 ACCGGAAAGTTGAGAACAAACCGGGCTTATTGTAGTG 480
          |||||||||||||||||||||||||||||||||||||
Db    190 ACCGGAAAGTTGAGAACAAACCGGGCTTATTGTAGTG 131

Qy    481 TTTGGCGATGAGAATGAGGGCCAACCAACAGTAGGGG 540
          |||||||||||||||||||||||||||||||||||||
Db    130 TTTGGCGATGAGAATGAGGGCCAACCAACAGTAGGGG 71

Qy    541 TTCAGAGACAAAGTAAATATTTCAGGCATCCTACTAC 600
          |||||||||||||||||||||||||||||||||||||
Db     70 TTCAGAGACAAAGTAAATATTTCAGGCATCCTACTAC 11

Qy    601 TATATTTGAG 610
          ||||||||||
Db     10 TATATTTGAG 1
```

RESULT 7
US-10-787-382-4
; Sequence 4, Application US/10787382
; Publication No. US20040191868A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.

Left column

```
RESULT 8

;   APPLICANT: Weber, Eric R.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C1-C1
;   GENERAL INFORMATION:
;   CURRENT APPLICATION NUMBER: US/10/787,382
;   CURRENT FILING DATE: 2004-02-24
;   PRIOR APPLICATION NUMBER: US/09/755,633
;   PRIOR FILING DATE: 2001-01-05
;   PRIOR APPLICATION NUMBER: 09/322,409
;   PRIOR FILING DATE: 1999-05-28
;   PRIOR APPLICATION NUMBER: 60/087,306
;   PRIOR FILING DATE: 1998-05-29
;   SOFTWARE: PatentIn Ver. 2.1
;   NUMBER OF SEQ ID NOS: 21
;
;   SEQ ID NO 4
;   LENGTH: 610
;   TYPE: DNA
;   ORGANISM: Canis familiaris
;   FEATURE:
;   NAME/KEY: CDS
;   LOCATION: (29)..(430)
;
US-10-787-382-4

Query Match             100.0%;  Score 610;  DB 19;  Length 610;
Best Local Similarity   100.0%;  Pred. No. 0;
Matches   610;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy         1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAGAATGCTTCTGAATTTGACTTTGCTAGC 60
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAGAATGCTTCTGAATTTGACTTTGCTAGC 60

Qy        61 TCTTGGGGCGTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGAAACTGGTGGC 120
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        61 TCTTGGGGCGTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGAAACTGGTGGC 120

Qy       121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGAACCTGAT 180
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGAACCTGAT 180

Qy       181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTAT 240
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTAT 240

Qy       241 AGACACATTGAAGAACCAAACTGCCCACGGGGGAGGCTGTGGGATAAACTATTCCAAAACTT 300
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       241 AGACACATTGAAGAACCAAACTGCCCACGGGGGAGGCTGTGGGATAAACTATTCCAAAACTT 300

Qy       301 GTCTTTAATAAAAGAAGAACACATAGAGCGCCCAAAAAAAAGGTGTGCAGGAGAGATGGAG 360
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       301 GTCTTTAATAAAAGAAGAACACATAGAGCGCCCAAAAAAAAGGTGTGCAGGAGAGATGGAG 360

Qy       361 AGTGACAAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTTAATAAACACCGAGTGGAC 420
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       361 AGTGACAAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTTAATAAACACCGAGTGGAC 420

Qy       421 ACCGGAAAGTTGAGAACAAAACCGGCTTTATTGTAGTGGAAGAGAAGGAAATGGTTT 480
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       421 ACCGGAAAGTTGAGAACAAAACCGGCTTTATTGTAGTGGAAGAGAAGGAAATGGTTT 480

Qy       481 TTTGGGCGATGAGAATGAGGGGCCAACCAACACAGTAGGGACTTAATGGCCAGTATAACTAAGC 540
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       481 TTTGGGCGATGAGAATGAGGGGCCAACCAACACAGTAGGGACTTAATGGCCAGTATAACTAAGC 540

Qy       541 TTCAGAGACAAAAGTAAAATATTTCAGGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       541 TTCAGAGACAAAAGTAAAATATTTCAGGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600

Qy       601 TATATTTGAG 610
             ||||||||||
Db       601 TATATTTGAG 610
```

Right column

```
US-10-787-382-6/c
Sequence 6, Application US/10787382
Publication No. US20040191868A1
;   GENERAL INFORMATION:
;   APPLICANT: Yang, Shumin
;   APPLICANT: McCall, Catherine A.
;   APPLICANT: Weber, Eric R.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C1-C1
;   CURRENT APPLICATION NUMBER: US/10/787,382
;   CURRENT FILING DATE: 2004-02-24
;   PRIOR APPLICATION NUMBER: 2001-01-05
;   PRIOR APPLICATION NUMBER: US/09/755,633
;   PRIOR FILING DATE: 2001-01-05
;   PRIOR APPLICATION NUMBER: 09/322,409
;   PRIOR FILING DATE: 1999-05-28
;   PRIOR APPLICATION NUMBER: 60/087,306
;   PRIOR FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 21
;   SOFTWARE: PatentIn Ver. 2.1
;
;   SEQ ID NO 6
;   LENGTH: 610
;   TYPE: DNA
;   ORGANISM: Canis familiaris
;
US-10-787-382-6

Query Match             100.0%;  Score 610;  DB 19;  Length 610;
Best Local Similarity   100.0%;  Pred. No. 0;
Matches   610;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy         1 CAAGGCAAACACTGAACATTTCAGAGCTATAGAGAGAATGCTTCGAATTTGAGTTTGCTAGC 60
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       610 CAAGGCAAACACTGAACATTTCAGAGCTATAGAGAGAATGCTTCGAATTTGAGTTTGCTAGC 551

Qy        61 TCTTGGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGAACTGGTGGC 120
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       550 TCTTGGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGAACTGGTGGC 491

Qy       121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGAACCTGAT 180
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       490 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGAACCTGAT 431

Qy       181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTAT 240
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       430 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTAT 371

Qy       241 AGACACATTGAAGAACCAAACTGCCCACGGGGGAGGCTGTGGGATAAACTATTCCAAAACTT 300
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       370 AGACACATTGAAGAACCAAACTGCCCACGGGGGAGGCTGTGGGATAAACTATTCCAAAACTT 311

Qy       301 GTCTTTAATAAAAGAAGAACACATAGAGCGCCCAAAAAAAAGGTGTGCAGGAGAGATGGAG 360
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       310 GTCTTTAATAAAAGAAGAACACATAGAGCGCCCAAAAAAAAGGTGTGCAGGAGAGATGGAG 251

Qy       361 AGTGACAAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTTAATAAACACCGAGTGGAC 420
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       250 AGTGACAAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTTAATAAACACCGAGTGGAC 191

Qy       421 ACCGGAAAGTTGAGAACAAAACCGGCTTTATTGTAGTGGAAGAGAAGGAAATGGTTT 480
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       190 ACCGGAAAGTTGAGAACAAAACCGGCTTTATTGTAGTGGAAGAGAAGGAAATGGTTT 131

Qy       481 TTTGGGCGATGAGAATGAGGGGCCAACCAACACAGTAGGGACTTAATGGCCAGTATAACTAGC 540
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       130 TTTGGGCGATGAGAATGAGGGGCCAACCAACACAGTAGGGACTTAATGGCCAGTATAACTAGC 71

Qy       541 TTCAGAGACAAAAGTAAAATATTTCAGGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        70 TTCAGAGACAAAAGTAAAATATTTCAGGGCATCCTACTACTTTATCACTTCACACAGATGAAA 11

Qy       601 TATATTTGAG 610
             ||||||||||
Db        10 TATATTTGAG 1
```

RESULT 9
US-09-755-633-7
; Sequence 7, Application US/0975633
; Patent No. US2002012720A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/09/755,633
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: PatentIn Ver. 2.1
;
; SEQ ID NO 7
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-755-633-7

Query Match   65.9%; Score 402; DB 9; Length 402;
Best Local Similarity 100.0%; Pred. No. 1.1e-203;
Matches   402; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   29 ATGAGAATGCTTCTCGAATTTGAGTTTGCTACTCTTGGGCGTGCCTTATGTTTCTGCCTTT 88
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 ATGAGAATGCTTCTCGAATTTGAGTTTGCTACTCTTGGGCGTGCCTTATGTTTCTGCCTTT 60

Qy   89 GCTGTAGAAAATCCCATGAATAGACTGGTTGCTCAGAGACACCTTGACACTGCTCCACTCAT 148
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTAGAAAATCCCATGAATAGACTGGTTGCTCAGAGACACCTTGACACTGCTCCACTCAT 120

Qy   149 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 208
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180

Qy   209 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACCATTGAAGAACCAAAACTGCCCAC 268
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACCATTGAAGAACCAAAACTGCCCAC 240

Qy   269 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 328
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300

Qy   329 CAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Qy   389 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 430
          ||||||||||||||||||||||||||||||||||||||||||
Db   361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402

RESULT 10
US-09-755-633-8/c
; Sequence 8, Application US/0975633
; Patent No. US2002012720A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/755,633
; CURRENT FILING DATE: 2001-01-05

Query Match   65.9%;
Best Local Similarity 100.0%;

; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: PatentIn Ver. 2.1
;
; SEQ ID NO 8
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-755-633-8

Query Match   65.9%; Score 402; DB 9; Length 402;
Best Local Similarity 100.0%; Pred. No. 1.1e-203;
Matches   402; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   29 ATGAGAATGCTTCTCGAATTTGAGTTTGCTACTCTTGGGCGTGCCTTATGTTTCTGCCTTT 88
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   402 ATGAGAATGCTTCTCGAATTTGAGTTTGCTACTCTTGGGCGTGCCTTATGTTTCTGCCTTT 343

Qy   89 GCTGTAGAAAATCCCATGAATAGACTGGTTGCTCAGAGACACCTTGACACTGCTCCACTCAT 148
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   342 GCTGTAGAAAATCCCATGAATAGACTGGTTGCTCAGAGACACCTTGACACTGCTCCACTCAT 283

Qy   149 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 208
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   282 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 223

Qy   209 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACCATTGAAGAACCAAAACTGCCCAC 268
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   222 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACCATTGAAGAACCAAAACTGCCCAC 163

Qy   269 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 328
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   162 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 103

Qy   329 CAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   102 CAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 43

Qy   389 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 430
          ||||||||||||||||||||||||||||||||||||||||||
Db   42 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 1

RESULT 11
US-10-218-654-83
; Sequence 83, Application US/10218654
; Publication No. US2003009609A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/10/218,654
; CURRENT FILING DATE: 2002-08-13
; PRIOR APPLICATION NUMBER: US/09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 83
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-218-654-83

Query Match   65.9%; Score 402; DB 14; Length 402;
Best Local Similarity 100.0%; Pred. No. 1.1e-203;

Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy   29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTTT   88
        ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTTT   60

Qy   89 GCTGTAGAAAATCCCATGAATAGACTGGTGGCGAGAGAACCTGACACTGCT  148
        ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCGAGAGAACCTGACACTGCT  120

Qy  149 CGAACTTGGGCTTGATAGGCGATGGGGAACCTGATTCCTACTCCTGAAAAT  208
        ||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 CGAACTTGGGCTTGATAGGCGATGGGGAACCTGATTCCTACTCCTGAAAAT  180

Qy  209 CAACTGTGCATTAAAGAAGAAGTTTTTCAGGGTATAGACACATTGAAGAGA  268
        ||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 CAACTGTGCATTAAAGAAGAAGTTTTTCAGGGTATAGACACATTGAAGAGA  240

Qy  269 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACAC  328
        ||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACAC  300

Qy  329 CAAAAAAAAAGGTGTGCAGGAGGAAAAGAGAGTGACAAAGTTCCTAGACTA  388
        ||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301 CAAAAAAAAAGGTGTGCAGGAGGAAAAGAGAGTGACAAAGTTCCTAGACTA  360

Qy  389 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT          430
        ||||||||||||||||||||||||||||||||||||||||||
Db  361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT          402
```

RESULT 12
US-10-218-654-84/c
; Sequence 84, Application US/10218654
; Publication No. US2003009609A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/10/218,654
; CURRENT FILING DATE: 2002-08-13
; PRIOR APPLICATION NUMBER: US/09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 84
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-218-654-84

Query Match 65.9%; Score 402; DB 14; Length 402;
Best Local Similarity 100.0%; Pred. No. 1.1e-203;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy   29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTTT   88
        ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTTT   88

Qy   89 GCTGTAGAAAATCCCATGAATAGACTGGTGGCGAGAGAACCTGACACTGCT  148
        ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   89 GCTGTAGAAAATCCCATGAATAGACTGGTGGCGAGAGAACCTGACACTGCT  148

Qy  149 CGAACTTGGGCTTGATAGGCGATGGGGAACCTGATTCCTACTCCTGAAAAT  208
        ||||||||||||||||||||||||||||||||||||||||||||||||||
Db  149 CGAACTTGGGCTTGATAGGCGATGGGGAACCTGATTCCTACTCCTGAAAAT  208

Qy  209 CAACTGTGCATTAAAGAAGAAGTTTTTCAGGGTATAGACACATTGAAGAGA  268
        ||||||||||||||||||||||||||||||||||||||||||||||||||
Db  209 CAACTGTGCATTAAAGAAGAAGTTTTTCAGGGTATAGACACATTGAAGAGA  268

Qy  269 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACAC  328
        ||||||||||||||||||||||||||||||||||||||||||||||||||
Db  269 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACAC  328

Qy  329 CAAAAAAAAAGGTGTGCAGGAGGAAAAGAGAGTGACAAAGTTCCTAGACTA  388
        ||||||||||||||||||||||||||||||||||||||||||||||||||
Db  329 CAAAAAAAAAGGTGTGCAGGAGGAAAAGAGAGTGACAAAGTTCCTAGACTA  388

Qy  389 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT          430
        ||||||||||||||||||||||||||||||||||||||||||
Db  389 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT          430
```

RESULT 13
US-10-262-439-83
; Sequence 83, Application US/10262439
; Publication No. US2003143196A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/10/262,439
; CURRENT FILING DATE: 2002-09-30
; PRIOR APPLICATION NUMBER: US/09/451,527
; PRIOR FILING DATE: 1999-12-01
; PRIOR APPLICATION NUMBER: US/09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 83
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-262-439-83

Query Match 65.9%; Score 402; DB 15; Length 402;
Best Local Similarity 100.0%; Pred. No. 1.1e-203;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy   29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTTT   88
        ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTTT   88

Qy   89 GCTGTAGAAAATCCCATGAATAGACTGGTGGCGAGAGAACCTGACACTGCT  148
        ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 GCTGTAGAAAATCCCATGAATAGACTGGTGGCGAGAGAACCTGACACTGCT  148

Qy  149 CGAACTTGGGCTTGATAGGCGATGGGGAACCTGATTCCTACTCCTGAAAAT  208
        ||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 CGAACTTGGGCTTGATAGGCGATGGGGAACCTGATTCCTACTCCTGAAAAT  180

Qy  209 CAACTGTGCATTAAAGAAGAAGTTTTTCAGGGTATAGACACATTGAAGAGA  268
        ||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 CAACTGTGCATTAAAGAAGAAGTTTTTCAGGGTATAGACACATTGAAGAGA  240

Qy  269 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACAC  328
        ||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACAC  300

Qy  329 CAAAAAAAAAGGTGTGCAGGAGGAAAAGAGAGTGACAAAGTTCCTAGACTA  388
        ||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301 CAAAAAAAAAGGTGTGCAGGAGGAAAAGAGAGTGACAAAGTTCCTAGACTA  360
```

Qy   389   GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 430
             ||||||||||||||||||||||||||||||||||||||||||||
Db   361   GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 402

RESULT 14
US-10-262-439-84/c
; Sequence 84, Application US/10262439
; Publication No. US20030143196A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shunin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/10/262,439
; CURRENT FILING DATE: 2002-09-30
; PRIOR APPLICATION NUMBER: US/09/451,527
; PRIOR FILING DATE: 1999-12-01
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 84
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-262-439-84

   Query Match   65.9%;   Score 402;   DB 15;   Length 402;
   Best Local Similarity   100.0%;   Pred. No. 1.1e-203;
   Matches   402;   Conservative   0;   Mismatches   0;   Indels   0;   Gaps   0;

Qy   29   ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 88
       ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   402   ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 343

Qy   89   GCTGTAGAAAATCCCATGAATAGACTGGTGCGAGAGACCCTTGACACTGCTCTCCACTCAT 148
       ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   342   GCTGTAGAAAATCCCATGAATAGACTGGTGCGAGAGACCCTTGACACTGCTCTCCACTCAT 283

Qy   149   CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 208
       ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   282   CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 223

Qy   209   CAACTGTGCATTAAAGAAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 268
       ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   222   CAACTGTGCATTAAAGAAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 163

Qy   269   GGGGAGGCTGTGGGATAAACTATTCCAAAACTTGTTCTTTAATAAAAGAACACATAGAGCGC 328
       ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   162   GGGGAGGCTGTGGGATAAACTATTCCAAAACTTGTTCTTTAATAAAAGAACACATAGAGCGC 103

Qy   329   CAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388
       ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   102   CAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 43

Qy   389   GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 430
       ||||||||||||||||||||||||||||||||||||||||||||
Db   42   GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 1

RESULT 15
US-10-787-382-7
; Sequence 7, Application US/10787382
; Publication No. US20040191868A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shunin
; APPLICANT: McCall, Catherine A.

; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/10/787,382
; CURRENT FILING DATE: 2004-02-24
; PRIOR APPLICATION NUMBER: US/09/755,633
; PRIOR FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: PatentIn Ver. 2.1
;
; SEQ ID NO 7
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-787-382-7

   Query Match   65.9%;   Score 402;   DB 19;   Length 402;
   Best Local Similarity   100.0%;   Pred. No. 1.1e-203;
   Matches   402;   Conservative   0;   Mismatches   0;   Indels   0;   Gaps   0;

Qy   29   ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 88
       ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1   ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 60

Qy   89   GCTGTAGAAAATCCCATGAATAGACTGGTGCGAGAGACCCTTGACACTGCTCTCCACTCAT 148
       ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61   GCTGTAGAAAATCCCATGAATAGACTGGTGCGAGAGACCCTTGACACTGCTCTCCACTCAT 120

Qy   149   CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 208
       ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121   CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 180

Qy   209   CAACTGTGCATTAAAGAAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 268
       ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181   CAACTGTGCATTAAAGAAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240

Qy   269   GGGGAGGCTGTGGGATAAACTATTCCAAAACTTGTTCTTTAATAAAAGAACACATAGAGCGC 328
       ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241   GGGGAGGCTGTGGGATAAACTATTCCAAAACTTGTTCTTTAATAAAAGAACACATAGAGCGC 300

Qy   329   CAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388
       ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   301   CAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Qy   389   GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 430
       ||||||||||||||||||||||||||||||||||||||||||||
Db   361   GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 402

Search completed: August 8, 2005, 14:25:03
Job time : 502.96 secs

GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

OM nucleic - nucleic search, using sw model

Run on: August 8, 2005, 13:43:44 ; Search time 2589.72 Seconds
                                          (without alignments)
                                          8965.920 Million cell updates/sec

Title: US-10-787-382-4
Perfect score: 610
Sequence: 1 caaggcaaacactgaacatt..........acagatgaaatatattgag 610

Scoring table: OLIGO_NUC
               Gapop 60.0 , Gapext 60.0
Searched: 34239544 seqs, 19032134700 residues
Word size :   0

Total number of hits satisfying chosen parameters: 68479088

Maximum DB seq length: 200000000
Minimum DB seq length: 0

Post-processing: Listing first 45 summaries

Database :   EST:*
               1: gb_est1:*
               2: gb_est2:*
               3: gb_htc:*
               4: gb_est3:*
               5: gb_est4:*
               6: gb_est5:*
               7: gb_est6:*
               8: gb_gss1:*
               9: gb_gss2:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	276	45.2	622	9	CE331159	CE331159 tigr-gss-
2	23	3.8	613	6	CB918469	CB918469 VVD033F06
3	22	3.6	405	9	AY412020	AY412020 Homo sapi
4	22	3.6	405	9	AY412021	AY412021 Pan trogl
5	22	3.6	456	3	BC066281	BC066281 Homo sapi
6	22	3.6	456	6	CD559532	CD559532 AGENCOURT
7	22	3.6	456	6	CD559686	CD559686 AGENCOURT
8	22	3.6	458	3	BC066279	BC066279 Homo sapi
9	22	3.6	458	6	BC066280	BC066280 Homo sapi
10	22	3.6	463	6	CD559535	CD559535 AGENCOURT
11	22	3.6	467	6	CD559688	CD559688 AGENCOURT
12	22	3.6	467	6	CD559690	CD559690 AGENCOURT
13	22	3.6	470	6	CD559687	CD559687 AGENCOURT
14	22	3.6	473	6	CD559689	CD559689 AGENCOURT
15	22	3.6	477	6	CD559608	CD559608 AGENCOURT
16	22	3.6	478	6	CD559534	CD559534 AGENCOURT
17	22	3.6	489	6	CD559536	CD559536 AGENCOURT
18	22	3.6	492	6	CD559533	CD559533 AGENCOURT
19	19	3.6	495	7	CR554944	CR554944 DKFZp469N
20	22	3.6	817	3	BC069137	BC069137 Homo sapi
21	22	3.6	907	8	BH130589	BH130589 ENTOIO2TR
22	21	3.4	428	6	CE301804	CE301804 tigr-gss-
23	21	3.4	503	5	BQ58873	BQ58873 MI-P-E4-a
24	21	3.4	737	9	CR305040	CR305040 Medicago
25	20	3.3	153	9	CE713006	CE713006 tigr-gss-
26	20	3.3	174	9	CE387560	CE387560 tigr-gss-
27	20	3.3	305	1	AI666365	AI666365 mu12c07.x
28	20	3.3	340	1	AI666525	AI666525 mu22f12.x
29	20	3.3	378	8	AQ134641	AQ134641 HS_3055_B
30	20	3.3	393	8	BH056804	BH056804 RPCI-24-3
31	20	3.3	417	5	BQ456087	BQ456087 ke26c12.y
32	20	3.3	431	1	AA209961	AA209961 mu12c07.r
33	20	3.3	484	1	AI423120	AI423120 tf23g07.x
34	20	3.3	490	7	CN448219	CN448219 GUO_CDNA-
35	20	3.3	503	9	CE299992	CE299992 tigr-gss-
36	20	3.3	511	9	CE533498	CE533498 tigr-gss-
37	20	3.3	514	9	CE699822	CE699822 tigr-gss-
38	20	3.3	522	5	BX514766	BX514766 tigr-gss-
39	20	3.3	528	8	AQ677395	AQ677395 HS_5526_A
40	20	3.3	538	1	AA980077	AA980077 ua28c09.r
41	20	3.3	539	7	CO756651	CO756651 Mddb5004i
42	20	3.3	551	9	CE255920	CE255920 tigr-gss-
43	20	3.3	557	8	AZ266075	AZ266075 RPCI-23-1
44	20	3.3	576	1	AI645939	AI645939 mu12c07.y
45	20	3.3	587	9	CE144318	CE144318 tigr-gss-

ALIGNMENTS

RESULT 1
CE331159

LOCUS   CE331159   622 bp   DNA   linear   GSS 26-SEP-2003
DEFINITION tigr-gss-dog-1700033986568 Dog Library Canis familiaris genomic,
            genomic survey sequence.
ACCESSION   CE331159
VERSION   CE331159.1 GI:36147469
KEYWORDS   GSS.
SOURCE   Canis familiaris (dog)
ORGANISM   Canis familiaris
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1 (bases 1 to 622)
AUTHORS   Kirkness,E.F., Bafna,V., Halpern,A.L., Levy,S., Remington,K.,
            Rusch,D.B., Delcher,A.L., Pop,M., Wang,W., Fraser,C.M. and
            Venter,J.C.
TITLE   The dog genome: survey sequencing and comparative analysis
JOURNAL   Science 301 (5641), 1898-1903 (2003)
MEDLINE   22875432
PUBMED   14512627
COMMENT   Contact: Kirkness EF
            The Institute for Genomic Research
            Department of Eukaryotic Genomics, TIGR, 9712 Medical Center Drive,
            Rockville, MD 20850, USA
            Tel: 301-838-0200
            Fax: 301-838-0208
            Email: ekirknes@tigr.org
            Class: shotgun.
FEATURES   Location/Qualifiers
     source   1..622
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
                     /strain="Standard Poodle"
                     /db_xref="taxon:9615"
                     /clone_lib="Dog Library"
                     /note="Site 1: BstXI; Libraries were prepared from
                     peripheral blood"
ORIGIN

Query Match   45.2%; Score 276; DB 9; Length 622;
Best Local Similarity   100.0%; Pred. No. 3.3e-136;
Matches 276; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   335 AAAAAGGTGTTGCAGGAGAGAAAGATGGAGAGACTGACAAAAGTTCCTAGACTACCTGCAAGTATTTT 394
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   289 AAAAAGGTGTTGCAGGAGAGAAAGATGGAGAGACTGACAAAAGTTCCTAGACTACCTGCAAGTATTTT 348

```
Qy  395 CTTGGTGTAATAAACACCGAGTGGACACCGAAAGTTGAGAGAACAAAACCGGCTTATTGTAG 454
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  349 CTTGGTGTAATAAACACCGAGTGGACACCGAAAGTTGAGAGAACAAAACCGGCTTATTGTAG 408

Qy  455 TGGAAGAGATTTTGGAGAAGAATGGTTTTTTGGCGATGAAGAATGAGGGGCCAACCAACAGTAG 514
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  409 TGGAAGAGATTTTGGAGAAGAATGGTTTTTTGGCGATGAAGAATGAGGGGCCAACCAACAGTAG 468

Qy  515 GGACTTAAATCGGCCAGTATAACTAACGCTTCAGAGACAAAAGTAAATATATTTCAGGCATCCTAC 574
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  469 GGACTTAAATCGGCCAGTATAACTAACGCTTCAGAGACAAAAGTAAATATATTTCAGGCATCCTAC 528

Qy  575 TACTTTATCACTTCACACAGATGAAAATATATTTGAG 610
        |||||||||||||||||||||||||||||||||||||
Db  529 TACTTTATCACTTCACACAGATGAAAATATATTTGAG 564
```

RESULT 2

```
LOCUS       CB918469         613 bp    mRNA    linear   EST 25-APR-2003
DEFINITION  CB918469 347571 An expressed sequence tag database for abiotic
            stressed berries of Vitis vinifera var. Chardonnay Vitis vinifera
            cDNA clone VVD03F06 5, mRNA sequence.
ACCESSION   CB918469
VERSION     CB918469.1  GI:30133130
KEYWORDS    EST.
SOURCE      Vitis vinifera
ORGANISM    Vitis vinifera
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
            rosids; Vitaceae; Vitis.
REFERENCE   1  (bases 1 to 613)
AUTHORS     Cushman,J.C.
TITLE       An expressed sequence tag database for abiotic stressed berries of
            Vitis vinifera var. Chardonnay
JOURNAL     Unpublished (2002)
COMMENT     Contact: Cushman JC
            Department of Biochemistry
            University of Nevada
            MS200, Reno, NV 89557-0014, USA
            Tel: 775-784-1918
            Fax: 775-784-1650
            Email: jcushman@unr.edu
            PCR Primers
            FORWARD: T3 20mer
            BACKWARD: T7 21mer (backward)
            Plate: 033 row: F column: 06
            Seq primer: T3 20mer
            High quality sequence stop: 613.
FEATURES             Location/Qualifiers
     source          1..613
                     /organism="Vitis vinifera"
                     /mol_type="mRNA"
                     /db_xref="taxon:29760"
                     /clone="VVD03F06"
                     /tissue_type="berries"
                     /dev_stage="mixed; 8, 9, 11, 13, 15, 16 weeks daf"
                     /clone_lib="An expressed sequence tag database for abiotic
                     stressed berries of Vitis vinifera var. Chardonnay"
                     /note="Vector: Lambda Uni-Zap XR, Bluescript SK-; Site_1:
                     EcoRI; Site_2: XhoI"
ORIGIN
```

```
Qy  453 AGTGGAAGAGATTTTGGAGAAGAAT 475
        |||||||||||||||||||||||||
Db  273 AGTGGAAGAGATTTTGGAGAAGAAT 295
```

```
Query Match          3.8%;  Score 23;  DB 6;  Length 613;
Best Local Similarity 100.0%;  Pred. No. 1.5;
Matches 23;  Conservative 0;  Mismatches 0;  Indels 0;  Gaps 0;
```

RESULT 3

```
LOCUS       AY412020         405 bp    DNA    linear   GSS 16-DEC-2003
DEFINITION  Homo sapiens IL5 gene, VIRTUAL TRANSCRIPT, partial sequence,
            genomic survey sequence.
ACCESSION   AY412020
VERSION     AY412020.1  GI:39767985
KEYWORDS    GSS.
SOURCE      Homo sapiens (human)
ORGANISM    Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 405)
AUTHORS     Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
            Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
            Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
            Adams,M.D. and Cargill,M.
TITLE       Inferring nonneutral evolution from human-chimp-mouse orthologous
            gene trios
JOURNAL     Science 302 (5652), 1960-1963 (2003)
PUBMED      14671302
REFERENCE   2  (bases 1 to 405)
AUTHORS     Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
            Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
            Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
            Adams,M.D. and Cargill,M.
TITLE       Direct Submission
JOURNAL     Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive,
            Rockville, MD 20850, USA
COMMENT     This sequence was made by sequencing genomic exons and ordering
            them based on alignment.
FEATURES             Location/Qualifiers
     source          1..405
                     /organism="Homo sapiens"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9606"
     gene            <1..>405
                     /gene="IL5"
                     /locus_tag="HCM4418"
ORIGIN
```

```
Qy   45 ATTTGAGTTTGCTAGCTCTTCG 66
        ||||||||||||||||||||||
Db   17 ATTTGAGTTTGCTAGCTCTTCG 38
```

```
Query Match          3.6%;  Score 22;  DB 9;  Length 405;
Best Local Similarity 100.0%;  Pred. No. 5;
Matches 22;  Conservative 0;  Mismatches 0;  Indels 0;  Gaps 0;
```

RESULT 4

```
AY412021
LOCUS       AY412021         405 bp    DNA    linear   GSS 16-DEC-2003
DEFINITION  Pan troglodytes IL5 gene, VIRTUAL TRANSCRIPT, partial sequence,
            genomic survey sequence.
ACCESSION   AY412021
VERSION     AY412021.1  GI:39767986
KEYWORDS    GSS.
SOURCE      Pan troglodytes (chimpanzee)
ORGANISM    Pan troglodytes
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.
REFERENCE   1  (bases 1 to 405)
AUTHORS     Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
            Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
            Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
            Adams,M.D. and Cargill,M.
TITLE       Inferring nonneutral evolution from human-chimp-mouse orthologous
            gene trios
JOURNAL     Science 302 (5652), 1960-1963 (2003)
PUBMED      14671302
REFERENCE   2  (bases 1 to 405)
AUTHORS     Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
            Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
```

```
TITLE
AUTHORS   Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
          Adams,M.D. and Cargill,M.
JOURNAL   Direct Submission
          Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive,
          Rockville, MD 20850, USA
COMMENT   This sequence was made by sequencing genomic exons and ordering
          them based on alignment.
FEATURES             Location/Qualifiers
     source          1..405
                     /organism="Pan troglodytes"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9598"
                     <1..>405
     gene            <1..>405
                     /gene="IL5"
                     /locus_tag="HCM4418"
ORIGIN

Query Match             3.6%;  Score 22;  DB 9;  Length 405;
Best Local Similarity   100.0%;  Pred. No. 5;
Matches   22;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy   45 ATTTGAGTTTGCTAGCTCTTGG 66
        ||||||||||||||||||||||
Db   17 ATTTGAGTTTGCTAGCTCTTGG 38

RESULT 5
LOCUS       BC066281
DEFINITION  Homo sapiens cDNA clone IMAGE:6971770, containing frame-shift
            errors.
ACCESSION   BC066281
VERSION     BC066281.1  GI:4490969
KEYWORDS    HTC.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 456)
  AUTHORS   Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
            Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
            Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
            Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
            Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
            Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
            Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
            Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
            Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
            McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
            Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
            Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
            Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodrigues,S.,
            Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
            Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
            Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
            Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
            Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
  TITLE     Generation and initial analysis of more than 15,000 full-length
            human and mouse cDNA sequences
  JOURNAL   Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
   PUBMED   12477932
REFERENCE   2  (bases 1 to 456)
  AUTHORS   Strausberg,R.
  JOURNAL   Direct Submission
            Submitted (03-FEB-2004) National Institutes of Health, Mammalian
            Gene Collection (MGC), Cancer Genomics Office, National Cancer
            Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
            USA
  REMARK    NIH-MGC Project URL: http://mgc.nci.nih.gov
COMMENT     Contact: MGC help desk
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
```

```
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Sequencing Group at the Stanford Human Genome
            Center, Stanford University School of Medicine, Stanford, CA  94305
            Web site:        http://www-shgc.stanford.edu
            Contact:  (Dickson, Mark) mcd@paxil.stanford.edu
            Dickson, M., Schmutz, J., Grimwood, J., Rodriguez, A., and Myers,
            R. M.

            Clone distribution: MGC clone distribution information can be found
            through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
            Series: IRAK Plate: 172 Row: a Column: 17
            This clone was selected for full length sequencing because it
            passed the following selection criteria: matched mRNA gi: 28559032

            This clone has the following problem: frame shifted.
FEATURES             Location/Qualifiers
     source          1..456
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971770"
                     /tissue_type="PCR rescued clones"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH10B"
                     /note="Vector: pDNR-Dual"
ORIGIN

Query Match             3.6%;  Score 22;  DB 3;  Length 456;
Best Local Similarity   100.0%;  Pred. No. 5;
Matches   22;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy   45 ATTTGAGTTTGCTAGCTCTTGG 66
        ||||||||||||||||||||||
Db   40 ATTTGAGTTTGCTAGCTCTTGG 61

RESULT 6
LOCUS       CD559532                 456 bp    mRNA    linear   EST 11-JUN-2003
DEFINITION  AGENCOURT_14497057 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971772 5', mRNA sequence.
ACCESSION   CD559532
VERSION     CD559532.1  GI:31585600
KEYWORDS    EST.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 456)
  AUTHORS   Unpublished (1999)
  TITLE     National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT     Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBK1 row: g column: 11
            High quality sequence stop: 456.
FEATURES             Location/Qualifiers
     source          1..456
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971772"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
```

RESULT 7
CD559686/c

```
LOCUS       CD559686     456 bp    mRNA    linear   EST 11-JUN-2003
DEFINITION  AGENCOURT 14497093 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971772 3', mRNA sequence.
ACCESSION   CD559686
VERSION     CD559686.1  GI:31585754
KEYWORDS    EST.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 456)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE     National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT     Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBK1  row: g  column: 11
            High quality sequence stop: 456.
FEATURES             Location/Qualifiers
     source          1..456
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971772"
                     /tissue_type="mixed"
                     /lab_host="DH5A (TI phage-resistant)"
                     /clone_lib="NIH MGC 195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
```

ORIGIN
```
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presv.dat
                     a Note: this is a NIH_MGC Library."
```

```
Qy   45 ATTTGAGTTTGCTAGCTCTTGG 66
         |||||||||||||||||||||||
Db   38 ATTTGAGTTTGCTAGCTCTTGG 59
```

Query Match   3.6%; Score 22; DB 6; Length 456;
Best Local Similarity 100.0%; Pred. No. 5;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

RESULT 8
BC066279
BC066279

```
LOCUS       BC066279     458 bp    mRNA    linear   HTC 12-FEB-2004
DEFINITION  Homo sapiens cDNA clone IMAGE:6971768, containing frame-shift
            errors.
ACCESSION   BC066279
VERSION     BC066279.1  GI:42490901
KEYWORDS    HTC.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 458)
  AUTHORS   Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
            Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
            Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
            Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
            Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
            Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
            Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
            Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
            Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
            McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
            Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
            Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
            Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodriguez,S.,
            Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
            Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
            Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
            Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
            Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
  TITLE     Generation and initial analysis of more than 15,000 full-length
            human and mouse cDNA sequences
  JOURNAL   Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
   PUBMED   12477932
REFERENCE   2 (bases 1 to 458)
  AUTHORS   Strausberg,R.
  TITLE     Direct Submission
  JOURNAL   Submitted (03-FEB-2004) National Institutes of Health, Mammalian
            Gene Collection (MGC), Cancer Genomics Office, National Cancer
            Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
            USA
  REMARK    NIH-MGC Project URL: http://mgc.nci.nih.gov
COMMENT     Contact: MGC help desk
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Sequencing Group at the Stanford Human Genome
            Center, Stanford University School of Medicine, Stanford, CA 94305
```

ORIGIN
```
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presv.dat
                     a Note: this is a NIH_MGC Library."
```

```
Qy   45 ATTTGAGTTTGCTAGCTCTTGG 66
         |||||||||||||||||||||||
Db  417 ATTTGAGTTTGCTAGCTCTTGG 396
```

Query Match   3.6%; Score 22; DB 6; Length 456;
Best Local Similarity 100.0%; Pred. No. 5;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Left column

```
RESULT 9

Qy      45 ATTTGAGTTTGCTAGCTCTTGG 66
           |||||||||||||||||||||||
Db      40 ATTTGAGTTTGCTAGCTCTTGG 61

Query Match      3.6%;  Score 22;  DB 3;  Length 458;
Best Local Similarity  100.0%;  Pred. No. 5;
Matches   22;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

ORIGIN
Location/Qualifiers
        1 . .458
        /organism="Homo sapiens"
        /mol_type="mRNA"
        /db_xref="taxon:9606"
        /clone="IMAGE:6971768"
        /tissue_type="PCR rescued clones"
        /clone_lib="NIH_MGC_195"
        /lab_host="DH10B"
        /note="Vector: pDNR-Dual"
This clone has the following problem: frame shifted.

FEATURES
source
This clone was selected for full length sequencing because it
passed the following selection criteria: matched mRNA gi: 28559032
Series: IRAK Plate: 172 Row: a Column: 15
through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
Clone distribution: MGC clone distribution information can be found
```

DEFINITION Homo sapiens cDNA clone IMAGE:6971769, containing frame-shift
LOCUS   BC066280   458 bp   mRNA   linear   HTC 12-FEB-2004
            errors.
ACCESSION   BC066280
VERSION   BC066280.1   GI:4490838
KEYWORDS   HTC.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 458)
AUTHORS   Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
            Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
            Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
            Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
            Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
            Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
            Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
            Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
            Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
            McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
            Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
            Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
            Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodrigues,S.,
            Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
            Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
            Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
            Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
            Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
TITLE   Generation and initial analysis of more than 15,000 full-length
            human and mouse cDNA sequences
JOURNAL   Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
PUBMED   1477932
REFERENCE   2 (bases 1 to 458)
AUTHORS   Strausberg,R.
TITLE   Direct Submission
JOURNAL   Submitted (03-FEB-2004) National Institutes of Health, Mammalian
            Gene Collection (MGC), Cancer Genomics Office, National Cancer
            Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,

Right column

Dickson, M., Schmutz, J., Grimwood, J., Rodriguez, A., and Myers,
R. M.
Contact: (Dickson, Mark) mcd@paxil.stanford.edu
Web site: http://www-shgc.stanford.edu

```
Clone distribution: MGC clone distribution information can be found
through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
Series: IRAK Plate: 172 Row: a Column: 15
This clone was selected for full length sequencing because it
passed the following selection criteria: matched mRNA gi: 28559032
This clone has the following problem: frame shifted.
```

FEATURES
source
        1 . .458
        /organism="Homo sapiens"
        /mol_type="mRNA"
        /db_xref="taxon:9606"
        /clone="IMAGE:6971768"
        /tissue_type="PCR rescued clones"
        /clone_lib="NIH_MGC_195"
        /lab_host="DH10B"
        /note="Vector: pDNR-Dual"
Location/Qualifiers

ORIGIN

Query Match   3.6%; Score 22; DB 3; Length 458;
Best Local Similarity 100.0%; Pred. No. 5;
Matches   22; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

```
Qy      45 ATTTGAGTTTGCTAGCTCTTGG 66
           |||||||||||||||||||||||
Db      40 ATTTGAGTTTGCTAGCTCTTGG 61
```

```
RESULT 10

COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585603.
          Unpublished (1999)
JOURNAL   National Institutes of Health, Mammalian Gene Collection (MGC)
TITLE     National Institutes of Health, Mammalian Gene Collection (MGC)
AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
REFERENCE 1  (bases 1 to 463)
          Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
ORGANISM  Homo sapiens
SOURCE    Homo sapiens (human)
KEYWORDS  EST.
VERSION   CD559535.2    GI:38558950
ACCESSION CD559535
          IMAGE:6971769 5', mRNA sequence.
DEFINITION AGENCOURT 14496865 NIH_MGC_195 Homo sapiens cDNA clone
LOCUS     CD559535                   463 bp    mRNA    linear    EST 26-NOV-2003
CD559535
```

COMMENT
Contact: Daniela S. Gerhard, Ph.D.
Office of Cancer Genomics
National Cancer Institute / NIH
Bldg. 31 Rm10A07 Bethesda, MD 20892
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Narayan Bhat
cDNA Library Preparation: Bhat Laboratory
cDNA Sequencing by: Agencourt Bioscience Corporation
DNA Sequencing by: Agencourt Bioscience Corporation
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: IRBK1 row: g column:08
High quality sequence stop: 463.

FEATURES
Location/Qualifiers

REMARK   USA
COMMENT   NIH-MGC Project URL: http://mgc.nci.nih.gov
Contact: MGC help desk
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Narayan Bhat
cDNA Library Preparation: Bhat Laboratory
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Sequencing Group at the Stanford Human Genome
Center, Stanford University School of Medicine, Stanford, CA 94305
Web site: http://www-shgc.stanford.edu
Contact: (Dickson, Mark) mcd@paxil.stanford.edu
Dickson, M., Schmutz, J., Grimwood, J., Rodriguez, A., and Myers,
R. M.

```
Clone distribution: MGC clone distribution information can be found
through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
Series: IRAK Plate: 172 Row: a Column: 16
This clone was selected for full length sequencing because it
passed the following selection criteria: matched mRNA gi: 28559032
This clone has the following problem: frame shifted.
```

FEATURES
source
        1 . .458
        /organism="Homo sapiens"
        /mol_type="mRNA"
        /db_xref="taxon:9606"
        /clone="IMAGE:6971769"
        /tissue_type="PCR rescued clones"
        /clone_lib="NIH_MGC_195"
        /lab_host="DH10B"
        /note="Vector: pDNR-Dual"
Location/Qualifiers

ORIGIN

Query Match   3.6%; Score 22; DB 3; Length 458;
Best Local Similarity 100.0%; Pred. No. 5;
Matches   22; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

```
Qy      45 ATTTGAGTTTGCTAGCTCTTGG 66
           |||||||||||||||||||||||
Db      40 ATTTGAGTTTGCTAGCTCTTGG 61
```

source   1..463
                /organism="Homo sapiens"
                /mol_type="mRNA"
                /db_xref="taxon:9606"
                /clone="IMAGE:6971769"
                /tissue_type="mixed"
                /clone_lib="NIH MGC_195"
                /lab_host="DH5A (T1 phage-resistant)"
                /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                loxP-HindIII; Clones from this library have been
                PCR-amplified using gene-specific primers to contain the
                complete open reading frame (based on known gene sequences
                available from NCBI's RefSeq). Template for PCR is cDNA
                derived from either pooled cytoplasmic polyA RNA from 30
                cells lines or pooled total RNA from 10 different tissues
                (from BD Biosciences/Clontech and Washington University).
                PCR products are directionally cloned into the loxP sites
                of the pDNR-Dual vector. Library constructed by Dr.
                Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                Expression Laboratory, Research Technology Program, SAIC
                Frederick, NCI-Frederick, Frederick, MD 21702). For
                information on which gene each clone represents, please
                visit our anonymous ftp site at
                ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presv.dat
                a Note: this is a NIH_MGC Library."

ORIGIN

Qy   45 ATTTGAGTTTGCTAGCTCTTGG 66
         |||||||||||||||||||||||
Db   44 ATTTGAGTTTGCTAGCTCTTGG 65

RESULT 11
CD559688/c
LOCUS   CD559688   467 bp   mRNA   linear   EST 19-NOV-2003
DEFINITION AGENCOURT_14496964 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971770 5', mRNA sequence.
ACCESSION   CD559688
VERSION   CD559688.2 GI:38453486
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
  ORGANISM Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 467)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585756.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBK1 row: g column: 09
            High quality sequence start: 11
            High quality sequence stop: 467.
FEATURES   Location/Qualifiers
source   1..467
                /organism="Homo sapiens"
                /mol_type="mRNA"
                /db_xref="taxon:9606"

Query Match   3.6%; Score 22; DB 6; Length 463;
Best Local Similarity   100.0%; Pred. No. 5;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

                /clone="IMAGE:6971770"
                /tissue_type="mixed"
                /clone_lib="NIH_MGC_195"
                /lab_host="DH5A (T1 phage-resistant)"
                /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                loxP-HindIII; Clones from this library have been
                PCR-amplified using gene-specific primers to contain the
                complete open reading frame (based on known gene sequences
                available from NCBI's RefSeq). Template for PCR is cDNA
                derived from either pooled cytoplasmic polyA RNA from 30
                cells lines or pooled total RNA from 10 different tissues
                (from BD Biosciences/Clontech and Washington University).
                PCR products are directionally cloned into the loxP sites
                of the pDNR-Dual vector. Library constructed by Dr.
                Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                Expression Laboratory, Research Technology Program, SAIC
                Frederick, NCI-Frederick, Frederick, MD 21702). For
                information on which gene each clone represents, please
                visit our anonymous ftp site at
                ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presv.dat
                a Note: this is a NIH_MGC Library."

ORIGIN

Qy   45 ATTTGAGTTTGCTAGCTCTTGG 66
         |||||||||||||||||||||||
Db   427 ATTTGAGTTTGCTAGCTCTTGG 406

RESULT 12
CD559690/c
LOCUS   CD559690   467 bp   mRNA   linear   EST 19-NOV-2003
DEFINITION AGENCOURT_14496838 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971768 5', mRNA sequence.
ACCESSION   CD559690
VERSION   CD559690.2 GI:38453490
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
  ORGANISM Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 467)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585758.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBK1 row: g column: 07
            High quality sequence stop: 467.
FEATURES   Location/Qualifiers
source   1..467
                /organism="Homo sapiens"
                /mol_type="mRNA"
                /db_xref="taxon:9606"
                /clone="IMAGE:6971768"
                /tissue_type="mixed"
                /lab_host="DH5A (T1 phage-resistant)"
                /clone_lib="NIH_MGC_195"
                /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:

Query Match   3.6%; Score 22; DB 6; Length 467;
Best Local Similarity   100.0%; Pred. No. 5;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

RESULT 13

Qy   45 ATTTGAGTTTGCTAGCTCTTGG 66
             |||||||||||||||||||||||
Db   427 ATTTGAGTTTGCTAGCTCTTGG 406

Query Match   3.6%;   Score 22;   DB 6;   Length 467;
Best Local Similarity 100.0%;   Pred. No. 5;
Matches   22; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

ORIGIN

LOCUS   CD559687/c   470 bp   mRNA   linear   EST 19-NOV-2003
DEFINITION   AGENCOURT 14497029 NIH_MGC_195 Homo sapiens cDNA clone
             IMAGE:6971771 5', mRNA sequence.
ACCESSION   CD559687
VERSION   CD559687.2 GI:38453484
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
  ORGANISM   Homo sapiens
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 470)
  AUTHORS   Mammalian Gene Collection (MGC)
  TITLE   National Institutes of Health, Mammalian Gene Collection
  JOURNAL   Unpublished (1999)
  COMMENT   NIH-MGC http://mgc.nci.nih.gov/.
             On Jun 10, 2003 this sequence version replaced gi:31585755.
             Contact: Daniela S. Gerhard, Ph.D.
             Office of Cancer Genomics
             National Cancer Institute / NIH
             Bldg. 31 Rm10A07 Bethesda, MD 20892
             Email: cgapbs-r@mail.nih.gov
             Tissue Procurement: Narayan Bhat
             cDNA Library Preparation: Bhat Laboratory
             cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
             DNA Sequencing by: Agencourt Bioscience Corporation
             Clone distribution: MGC clone distribution information can be
             found through the I.M.A.G.E. Consortium/LLNL at:
             http://image.llnl.gov
FEATURES   Location/Qualifiers
     source   1..470
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971771"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled total RNA from 30
                     cells lines or pooled cytoplasmic polyA RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSv.dat
                     a Note: this is a NIH_MGC Library."
             Plate: IRBKl row: g column: 10
             High quality sequence start: 14
             High quality sequence stop: 470.

RESULT 14

Qy   45 ATTTGAGTTTGCTAGCTCTTGG 66
             |||||||||||||||||||||||
Db   430 ATTTGAGTTTGCTAGCTCTTGG 409

Query Match   3.6%;   Score 22;   DB 6;   Length 470;
Best Local Similarity 100.0%;   Pred. No. 5;
Matches   22; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

ORIGIN

LOCUS   CD559689/c   473 bp   mRNA   linear   EST 19-NOV-2003
DEFINITION   AGENCOURT 14496901 NIH_MGC_195 Homo sapiens cDNA clone
             IMAGE:6971769 5', mRNA sequence.
ACCESSION   CD559689
VERSION   CD559689.2 GI:38453487
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
  ORGANISM   Homo sapiens
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 473)
  AUTHORS   Mammalian Gene Collection (MGC)
  TITLE   National Institutes of Health, Mammalian Gene Collection
  JOURNAL   Unpublished (1999)
  COMMENT   NIH-MGC http://mgc.nci.nih.gov/.
             On Jun 10, 2003 this sequence version replaced gi:31585757.
             Contact: Daniela S. Gerhard, Ph.D.
             Office of Cancer Genomics
             National Cancer Institute / NIH
             Bldg. 31 Rm10A07 Bethesda, MD 20892
             Email: cgapbs-r@mail.nih.gov
             Tissue Procurement: Narayan Bhat
             cDNA Library Preparation: Bhat Laboratory
             cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
             DNA Sequencing by: Agencourt Bioscience Corporation
             Clone distribution: MGC clone distribution information can be
             found through the I.M.A.G.E. Consortium/LLNL at:
             http://image.llnl.gov
FEATURES   Location/Qualifiers
     source   1..473
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971769"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled total RNA from 30
                     cells lines or pooled cytoplasmic polyA RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSv.dat
                     a Note: this is a NIH_MGC Library."
             Plate: IRBKl row: g column: 08
             High quality sequence start: 16
             High quality sequence stop: 473.

RESULT 15
CD559608

LOCUS   CD559608   477 bp   mRNA   linear   EST 26-NOV-2003
DEFINITION   AGENCOURT_14496997 NIH_MGC_195 NIH MGC 195 Homo sapiens cDNA clone
              IMAGE:6971867 5', mRNA sequence.
ACCESSION   CD559608
VERSION   CD559608.2 GI:38558942
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
  ORGANISM   Homo sapiens
              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
              Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 477)
  AUTHORS   National Institutes of Health, Mammalian Gene Collection (MGC)
  TITLE   NIH-MGC http://mgc.nci.nih.gov/.
  JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585676.
              Contact: Daniela S. Gerhard, Ph.D.
              Office of Cancer Genomics
              National Cancer Institute / NIH
              Bldg. 31 Rm10A07 Bethesda, MD 20892
              Email: cgapb-r@mail.nih.gov
              Tissue Procurement: Narayan Bhat
              cDNA Library Preparation: Bhat Laboratory
              cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
              DNA Sequencing by: Agencourt Bioscience Corporation
              Clone distribution: MGC clone distribution information can be
              found through the I.M.A.G.E. Consortium/LLNL at:
              http://image.llnl.gov
              Plate: IRBK2 row: g column: 10
              High quality sequence start: 107
              High quality sequence stop: 353.
FEATURES   Location/Qualifiers
     source   1..477
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971867"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH MGC 195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For

ORIGIN
              of the pDNR-Dual vector. Library constructed by Dr.
              Narayan Bhat, Earl Bere III and Hongling Liao (Gene
              Expression Laboratory, Research Technology Program, SAIC
              Frederick, NCI-Frederick, Frederick, MD 21702). For
              information on which gene each clone represents, please
              visit our anonymous ftp site at
              ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSV.dat
              a Note: this is a NIH_MGC Library."

Qy   45 ATTTGAGTTTGCTAGCTCTTGG 66
             ||||||||||||||||||||||
Db   433 ATTTGAGTTTGCTAGCTCTTGG 412

Query Match   3.6%; Score 22; DB 6; Length 473;
Best Local Similarity   100.0%; Pred. No. 5;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

ORIGIN
              information on which gene each clone represents, please
              visit our anonymous ftp site at
              ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSV.dat
              a Note: this is a NIH_MGC Library."

Qy   45 ATTTGAGTTTGCTAGCTCTTGG 66
             ||||||||||||||||||||||
Db   57 ATTTGAGTTTGCTAGCTCTTGG 78

Query Match   3.6%; Score 22; DB 6; Length 477;
Best Local Similarity   100.0%; Pred. No. 5;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Search completed: August 9, 2005, 00:13:18
Job time : 2594.72 secs

OM nucleic - nucleic search, using sw model
GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

Run on: August 7, 2005, 08:50:30 ; Search time 124.226 Seconds
                 (without alignments)
                 8034.812 Million cell updates/sec

Title: US-10-787-382-4
Perfect score: 610
Sequence: 1 caaggcaaacactgaacatt.........acagatgaaatatattgag 610
Scoring table: IDENTITY NUC
                 Gapop 10.0 , Gapext 1.0
Searched: 1202784 seqs, 81818359 residues

Total number of hits satisfying chosen parameters: 2405568

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
                 Maximum Match 100%
                 Listing first 45 summaries

Database :   Issued_Patents NA:*
                 1: /cgn2_6/ptodata/1/ina/5A_COMB.seq:*
                 2: /cgn2_6/ptodata/1/ina/5B_COMB.seq:*
                 3: /cgn2_6/ptodata/1/ina/6A_COMB.seq:*
                 4: /cgn2_6/ptodata/1/ina/6B_COMB.seq:*
                 5: /cgn2_6/ptodata/1/ina/PcTUS_COMB.seq:*
                 6: /cgn2_6/ptodata/1/ina/backfiles1.seq:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	610	100.0	610	4	US-09-322-409-80	Sequence 80, Appl
2	610	100.0	610	4	US-09-322-409-82	Sequence 82, Appl
3	610	100.0	610	4	US-09-451-527-80	Sequence 80, Appl
4	610	100.0	610	4	US-09-451-527-82	Sequence 82, Appl
c 5	402	65.9	402	4	US-09-322-409-83	Sequence 83, Appl
c 6	402	65.9	402	4	US-09-322-409-84	Sequence 84, Appl
c 7	402	65.9	402	4	US-09-451-527-83	Sequence 83, Appl
c 8	402	65.9	402	4	US-09-451-527-84	Sequence 84, Appl
c 9	401.8	65.9	405	4	US-09-371-615A-1	Sequence 1, Appli
10	379	62.1	816	3	US-09-079-839-2	Sequence 2, Appli
11	377.4	61.9	816	3	US-09-023-655-1236	Sequence 1236, Ap
12	345	56.6	345	4	US-09-322-409-85	Sequence 85, Appl
c 13	345	56.6	345	4	US-09-322-409-87	Sequence 87, Appl
c 14	345	56.6	345	4	US-09-451-527-85	Sequence 85, Appl
c 15	345	56.6	345	4	US-09-451-527-87	Sequence 87, Appl
16	217.6	35.7	1534	3	US-08-629-643A-4	Sequence 4, Appli
17	217.6	35.7	1534	3	US-09-155-884-4	Sequence 4, Appli
18	217.4	35.7	377	3	US-09-180-864-1	Sequence 1, Appli
19	181.4	29.7	375	4	US-09-556-818-33	Sequence 33, Appl
20	178.6	29.3	357	4	US-09-556-818-35	Sequence 35, Appl
21	178.6	29.3	381	4	US-09-556-818-27	Sequence 27, Appl
22	172.2	28.2	381	4	US-09-556-818-37	Sequence 37, Appl
23	168.6	27.6	375	4	US-09-556-818-39	Sequence 39, Appl
24	166	27.2	444	4	US-09-556-818-43	Sequence 43, Appl
25	166.4	27.3	399	4	US-09-556-818-31	Sequence 31, Appl
26	162.2	26.6	375	4	US-09-556-818-29	Sequence 29, Appl
27	161.6	26.5	393	4	US-09-556-818-41	Sequence 41, Appl
28	152.4	25.0	3230	3	US-09-280-799-78	Sequence 78, Appl
29	152.4	25.0	3230	6	5324640-1	Patent No. 5324640
30	152.4	25.0	3230	6	5324640-1-1	Patent No. 5324640
31	149.2	24.5	351	4	US-09-556-818-51	Sequence 51, Appl
32	145	23.8	393	4	US-09-556-818-55	Sequence 55, Appl
33	144.8	23.8	375	4	US-09-556-818-45	Sequence 45, Appl
34	144.8	23.7	438	2	US-09-556-818-59	Sequence 59, Appl
35	141.8	23.2	387	4	US-09-556-818-57	Sequence 57, Appl
36	140.8	23.1	369	4	US-09-556-818-53	Sequence 53, Appl
37	126.4	20.7	369	4	US-09-556-818-49	Sequence 49, Appl
38	124.4	20.4	387	4	US-09-556-818-47	Sequence 47, Appl
39	90.6	14.9	6727	3	US-08-629-643A-5	Sequence 5, Appli
40	90.6	14.9	6727	3	US-09-155-884-5	Sequence 5, Appli
41	90.6	14.9	7218	1	US-08-232-463-14	Sequence 14, Appli
42	58.2	9.5	6727	3	US-09-556-818-61	Sequence 61, Appli
43	45.8	7.5	57	4	US-09-556-818-61	Sequence 61, Appli
44	42.2	6.9	47	4	US-08-466-852-2	Sequence 2, Appli
45	39.4	6.5	1141	4	US-09-806-708B-22	Sequence 22, Appl

ALIGNMENTS

RESULT 1
US-09-322-409-80

; Sequence 80, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 80
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (29)..(430)
US-09-322-409-80

Query Match   100.0%; Score 610; DB 4; Length 610;
Best Local Similarity   100.0%; Pred. No. 9.2e-188;
Matches 610; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 CAAGGCAAACACTGAACATTTCAGAGCTATAGAGAATCCTTCTGAAATTTGAGTTTGCTAGC 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 CAAGGCAAACACTGAACATTTCAGAGCTATAGAGAATCCTTCTGAAATTTGAGTTTGCTAGC 60

Qy   61 TCTTGGGGCTGCCTATGTTTCTTTGCTTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGC 120
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 TCTTGGGGCTGCCTATGTTTCTTTGCTTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGC 120

Qy   121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGAACCTGAT 180
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGAACCTGAT 180

Qy   181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTAT 240
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTAT 240

Qy   241 AGACACATTGAAGAACCAAAACTGCCCACGCGGGGAGGGCTGTGGGATAAAACTATTCCAAAACTT 300
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 AGACACATTGAAGAACCAAAACTGCCCACGCGGGGAGGGCTGTGGGATAAAACTATTCCAAAACTT 300

RESULT 2
US-09-322-409-82/C
; Sequence 82, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 82
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-322-409-82

  Query Match   100.0%; Score 610; DB 4; Length 610;
  Best Local Similarity   100.0%; Pred. No. 9.2e-188;
  Matches 610; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 CAAGGCAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   610 CAAGGCAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 551

Qy   61 TCTTGGGGGCTGCCTARGTTTTCTGCCTTTGCTTGGTAGAAAATCCCATGAATAGACTCGGC 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   550 TCTTGGGGGCTGCCTARGTTTTCTGCCTTTGCTTGGTAGAAAATCCCATGAATAGACTCGGC 491

Qy   121 AGAGACCCTTGACACTGCTCTCCACTCATCGAACTTGGCTAGCGGATCGGGAACCTGGAT 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   490 AGAGACCCTTGACACTGCTCTCCACTCATCGAACTTGGCTAGCGGATCGGGAACCTGGAT 431

Qy   181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   430 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 371

Qy   241 AGACACATTGAAGAACCAAACTGCCCACGGGGGAGGCGGTGTGGATAAACTATTCCAAAACTT 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   370 AGACACATTGAAGAACCAAACTGCCCACGGGGGAGGCGGTGTGGATAAACTATTCCAAAACTT 311

Qy   301 GTCTTTAATAAAAGAACACATAGACGCGCCAAAAAAAAAAAGGTGTTGCAGGAGAGAAAGATGGAG 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   301 GTCTTTAATAAAAGAACACATAGACGCGCCAAAAAAAAAAAGGTGTTGCAGGAGAGAAAGATGGAG 360

Qy   361 AGTGACAAAGTTCCTAGACTACCTGCCAAGTATTTCTTGGTGTAATAAAACACCGAGTGGAC 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   361 AGTGACAAAGTTCCTAGACTACCTGCCAAGTATTTCTTGGTGTAATAAAACACCGAGTGGAC 420

Qy   421 ACCGGAAAGTTGAGAACAAAACCGGGCTTATTGTAGTGTAGTGGAAGATTTTGGAGAAGAATGGTTT 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   421 ACCGGAAAGTTGAGAACAAAACCGGGCTTATTGTAGTGTAGTGGAAGATTTTGGAGAAGAATGGTTT 480

Qy   481 TTTGCGGATGAGAATGAGGGGCCAACCAACAGTAGGGGACTTAAATGGCCAGTATAACTAAGC 540
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   481 TTTGCGGATGAGAATGAGGGGCCAACCAACAGTAGGGGACTTAAATGGCCAGTATAACTAAGC 540

Qy   541 TTCAGAGACAAAGTAAAATATTTCACTTCACTTCACACAGATGAAA 600
              ||||||||||||||||||||||||||||||||||||||||||||||
Db   541 TTCAGAGACAAAGTAAAATATTTCACTTCACTTCACACAGATGAAA 600

Qy   601 TATATTTGAG 610
              ||||||||||
Db   601 TATATTTGAG 610

RESULT 3
US-09-451-527-80
; Sequence 80, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 80
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (29)..(430)
US-09-451-527-80

  Query Match   100.0%; Score 610; DB 4; Length 610;
  Best Local Similarity   100.0%; Pred. No. 9.2e-188;
  Matches 610; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 CAAGGCAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 CAAGGCAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60

Qy   61 TCTTGGGGGCTGCCTARGTTTTCTGCCTTTGCTTGGTAGAAAATCCCATGAATAGAGTCGGC 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 TCTTGGGGGCTGCCTARGTTTTCTGCCTTTGCTTGGTAGAAAATCCCATGAATAGAGTCGGC 120

Qy   121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTAGGGGATGGGAAACCTGAT 180
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTAGGGGATGGGAAACCTGAT 180

Qy   181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 240

Qy   250 AGTGACAAAGTTCCTAGACTACCTGCCAAGTATTTCTTGGTGTAATAAAACACCGAGTGGAC 191
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   250

Qy   310 GTCTTTAATAAAAGAACACATAGACGCGCCAAAAAAAAAAAGGTGTTGCAGGAGAGAAAGATGGAG 251

Db   301 AGTGACAAAGTTCCTAGACTACCTGCCAAGTATTTCTTGGTGTAATAAAACACCGAGTGGAC 191

Qy   421 ACCGGAAAGTTGAGAACAAAACCGGGCTTATTGTAGTGTAGTGGAAGATTTTGGAGAAGAATGGTTT 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   190 ACCGGAAAGTTGAGAACAAAACCGGGCTTATTGTAGTGTAGTGGAAGATTTTGGAGAAGAATGGTTT 131

Qy   481 TTTGCGGATGAGAATGAGGGGCCAACCAACAGTAGGGGACTTAAATGGCCAGTATAACTAAGC 540
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   130 TTTGCGGATGAGAATGAGGGGCCAACCAACAGTAGGGGACTTAAATGGCCAGTATAACTAAGC 71

Qy   541 TTCAGAGACAAAGTAAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   70 TTCAGAGACAAAGTAAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 11

Qy   601 TATATTTGAG 610
              ||||||||||
Db   10 TATATTTGAG 1

Left column

```
Db  181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 240
Qy  241 AGACACATTGAAGAACCAAACTGCCCACGGGGAGGCGTGGGATAAACTATTCCAAAACTT 300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 AGACACATTGAAGAACCAAACTGCCCACGGGGAGGCGTGGGATAAACTATTCCAAAACTT 300
Qy  301 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 360
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 360
Qy  361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGGTGTAATAAACACCGAGTGGAC 420
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGGTGTAATAAACACCGAGTGGAC 420
Qy  421 ACCGGAAAGTTGAGAACAAAACCGGCTTATTGTAGTGGAAGAGTTTGGAGAAGAATGGTTT 480
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  421 ACCGGAAAGTTGAGAACAAAACCGGCTTATTGTAGTGGAAGAGTTTGGAGAAGAATGGTTT 480
Qy  481 TTTGGCGGATGAGAATGAGGGGCCAACCAACAGTAGGGGGACTTAATGGCCAGTATAACTAAGC 540
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  481 TTTGGCGGATGAGAATGAGGGGCCAACCAACAGTAGGGGGACTTAATGGCCAGTATAACTAAGC 540
Qy  541 TTCAGAGACAAAGTAAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  541 TTCAGAGACAAAGTAAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600
Qy  601 TATATTTGAG 610
        ||||||||||
Db  601 TATATTTGAG 610
```

RESULT 4
US-09-451-527-82/c
Sequence 82, Application US/09451527
; Patent No. 648403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 82
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-451-527-82

Query Match   100.0%; Score 610; DB 4; Length 610;
Best Local Similarity   100.0%;
Matches 610; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1 CAAGGCAAAACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTGTTGCTAGC 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  610 CAAGGCAAAACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTGTTGCTAGC 551
Qy   61 TCTTGGGGCTGCCTATGTTTTCTGCCTTTGCTGTGTAGAAAATCCATGAATAGACTGGTGGC 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  550 TCTTGGGGCTGCCTATGTTTTCTGCCTTTGCTGTGTAGAAAATCCATGAATAGACTGGTGGC 491
Qy  121 AGAGACCTTGACACTGCTCTCCACACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGAT 180
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  490 AGAGACCTTGACACTGCTCTCCACACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGAT 431
```

Right column

```
Qy  181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  430 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 371
Qy  241 AGACACATTGAAGAACCAAACTGCCCACGGGGAGGCGTGGGATAAACTATTCCAAAACTT 300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  370 AGACACATTGAAGAACCAAACTGCCCACGGGGAGGCGTGGGATAAACTATTCCAAAACTT 311
Qy  301 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 360
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  310 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 251
Qy  361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGGTGTAATAAACACCGAGTGGAC 420
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  250 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGGTGTAATAAACACCGAGTGGAC 191
Qy  421 ACCGGAAAGTTGAGAACAAAACCGGCTTATTGTAGTGGAAGAGTTTGGAGAAGAATGGTTT 480
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  190 ACCGGAAAGTTGAGAACAAAACCGGCTTATTGTAGTGGAAGAGTTTGGAGAAGAATGGTTT 131
Qy  481 TTTGGCGGATGAGAATGAGGGGCCAACCAACAGTAGGGGGACTTAATGGCCAGTATAACTAAGC 540
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  130 TTTGGCGGATGAGAATGAGGGGCCAACCAACAGTAGGGGGACTTAATGGCCAGTATAACTAAGC 71
Qy  541 TTCAGAGACAAAGTAAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   70 TTCAGAGACAAAGTAAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 11
Qy  601 TATATTTGAG 610
        ||||||||||
Db   10 TATATTTGAG 1
```

RESULT 5
US-09-322-409-83
Sequence 83, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 83
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-322-409-83

Query Match   65.9%; Score 402; DB 4; Length 402;
Best Local Similarity   100.0%;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy   29 ATGAGAATGCTTCTGAATTTGAGTTGTTGCTAGCTCTTGGGGCTGCCTATGTTTTCTGCCTTT 88
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 ATGAGAATGCTTCTGAATTTGAGTTGTTGCTAGCTCTTGGGGCTGCCTATGTTTTCTGCCTTT 60
Qy   89 GCTGTAGAAAATCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACACTCAT 148
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTAGAAAATCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACACTCAT 120
Qy  149 CGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 208
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 CGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180
```

RESULT 6
US-09-322-409-84/c
; Sequence 84, Application US/0932240
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 84
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-322-409-84

  Query Match   65.9%; Score 402; DB 4; Length 402;
  Best Local Similarity   100.0%; Pred. No. 2.7e-120;
  Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   29 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGCGTGCCTTATGTTTCTGCCTTT 88
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGCGTGCCTTATGTTTCTGCCTTT 60

Qy   89 GCTGTTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 148
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy   149 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 208
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180

Qy   209 CAACTGTGCATTAAAAGAAGTTTTTCAGGGGTATAGACACCATTGAAGAACCAAAACTGCCCAC 268
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CAACTGTGCATTAAAAGAAGTTTTTCAGGGGTATAGACACCATTGAAGAACCAAAACTGCCCAC 240

Qy   269 GGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAGAAGAACACATAGAGCGC 328
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 GGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAGAAGAACACATAGAGCGC 300

Qy   329 CAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Qy   389 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 430
              ||||||||||||||||||||||||||||||||||||||||||||
Db   361 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 402

RESULT 7
US-09-451-527-83
; Sequence 83, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 83
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-451-527-83

  Query Match   65.9%; Score 402; DB 4; Length 402;
  Best Local Similarity   100.0%; Pred. No. 2.7e-120;
  Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   29 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGCGTGCCTTATGTTTCTGCCTTT 88
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGCGTGCCTTATGTTTCTGCCTTT 60

Qy   89 GCTGTTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 148
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy   149 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 208
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180

Qy   209 CAACTGTGCATTAAAAGAAGTTTTTCAGGGGTATAGACACCATTGAAGAACCAAAACTGCCCAC 268
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CAACTGTGCATTAAAAGAAGTTTTTCAGGGGTATAGACACCATTGAAGAACCAAAACTGCCCAC 240

Qy   269 GGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAGAAGAACACATAGAGCGC 328
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 GGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAGAAGAACACATAGAGCGC 300

Qy   329 CAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Qy   389 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 430
              ||||||||||||||||||||||||||||||||||||||||||||
Db   361 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 402

RESULT 8
US-09-451-527-84/c
; Sequence 84, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527

```
;   CURRENT FILING DATE: 1999-12-01
;   EARLIER APPLICATION NUMBER: 09/322,409
;   EARLIER FILING DATE: 1999-05-28
;   EARLIER APPLICATION NUMBER: 60/087,306
;   EARLIER FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 174
;   SOFTWARE: Patentin Ver. 2.0
;
;   SEQ ID NO 84
;   LENGTH: 402
;   TYPE: DNA
;   ORGANISM: Canis familiaris
US-09-451-527-84

Query Match         65.9%;  Score 402;  DB 4;  Length 402;
Best Local Similarity   100.0%;  Pred. No. 2.7e-120;
Matches   402;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy     29  ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT   88
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    402  ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT  343

Qy     89  GCTGTGTAGAAAAATCCCATGAAATAGACTGGTCGGCGAGAGACCTTGACACTGCTCTCCA  148
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    342  GCTGTGTAGAAAAATCCCATGAAATAGACTGGTCGGCGAGAGACCTTGACACTGCTCTCCAT  283

Qy    149  CGAACTTGGCTGATAGGCGATGGGAGGACCTTGACACTGCTCTCCTGAAAAATAAAATCAC  208
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    282  CGAACTTGGCTGATAGGCGATGGGAGGACCTTGACACTGCTCTCCTGAAAAATAAAATCAC  223

Qy    209  CAACTGTGCATTAAAGGAAGTTTTTTCAGGGTATAGACACATTGAAGAAACCAAACTGCCCAC  268
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    222  CAACTGTGCATTAAAGGAAGTTTTTTCAGGGTATAGACACATTGAAGAAACCAAACTGCCCAC  163

Qy    269  GGGGAGGCGTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAGAAACACATAGAGCGC  328
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    162  GGGGAGGCGTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAGAAACACATAGAGCGC  103

Qy    329  CAAAAAAAAGGTGTCCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA  388
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    102  CAAAAAAAAGGTGTCCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA   43

Qy    389  GTATTTCTTGGTGTAATAAAACACCGAGTGGGACACCGGAAAGT  430
           |||||||||||||||||||||||||||||||||||||||||||
Db     42  GTATTTCTTGGTGTAATAAAACACCGAGTGGGACACCGGAAAGT    1


RESULT 9
US-09-371-615A-1
; Sequence 1, Application US/09371615A
; Patent No. 6537781
;   GENERAL INFORMATION:
;   APPLICANT: IDEXX LABORATORIES
;   TITLE OF INVENTION: METHODS AND COMPOSITIONS CONCERNING
;   TITLE OF INVENTION: CANINE INTERLEUKIN 5
;   FILE REFERENCE: 03640001700US00
;   CURRENT APPLICATION NUMBER: US/09/371,615A
;   CURRENT FILING DATE: 1999-08-10
;   NUMBER OF SEQ ID NOS: 8
;   SOFTWARE: FastSEQ for Windows Version 3.0
;
;   SEQ ID NO 1
;   LENGTH: 405
;   TYPE: DNA
;   ORGANISM: Canis familiaris
US-09-371-615A-1

Query Match         65.9%;  Score 401.8;  DB 4;  Length 405;
Best Local Similarity   99.5%;  Pred. No. 3.2e-120;
Matches   403;  Conservative   0;  Mismatches   2;  Indels   0;  Gaps   0;

Qy     29  ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT   88
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1  ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT   60
```

```
Qy     89  GCTGTGTAGAAAAATCCCATGAAATAGACTGGTCGGCGAGAGACCTTGACACTGCTCTCCACTCAT  148
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61  GCTGTGTAGAAAAATCCCATGAAATAGACTGGTCGGCGAGAGACCTTGACACTGCTCTCCACTCAT  120

Qy    149  CGAACTTGGCTGATAGGCGATGGGAACCTGAATGAATGAGAGACTGGTCGGCGAGAGAATAAAATCAC  208
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121  CGAACTTGGCTGATAGGCGATGGGAACCTGAATGAATGAGAGACTGGTCGGCGAGAGAATAAAATCAC  180

Qy    209  CAACTGTGCATTAAAGGAAGTTTTTCAGGGTATAGACACATTGAAGAAACCAAACTGCCCAC  268
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181  CAACTGTGCATTAAAGGAAGTTTTTCAGGGTATAGACACATTGAAGAAACCAAACTGCCCAC  240

Qy    269  GGGGAGGCGCTGTGGATAAAACTATTCTTTAATAAAGAAACACATAGAGCGC  328
           |||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241  GGGGAGGCGCTGTGGATAAAACTATTCTTTAATAAAGAAACACATAGAGCGC  300

Qy    329  CAAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA  388
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301  CAAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA  360

Qy    389  GTATTTCTTGGTGTAATAAAACACCGAGTGGGACACCGGAAAGTTGA  405
           |||||||||||||||||||||||||||||||||||||||||||||||
Db    361  GTATTTCTTGGTGTAATAAAACACCGAGTGGGACACCGGAAAGTTGA  405


RESULT 10
US-09-079-839-2
; Sequence 2, Application US/09079839
; Patent No. 6048726
;   GENERAL INFORMATION:
;   APPLICANT: Weltman, Joel K.
;   APPLICANT: Karim, Aftab S.
;   TITLE OF INVENTION: INHIBITION OF EOSINOPHILIC INFLAMMATION
;   FILE REFERENCE: 09998/002001
;   CURRENT APPLICATION NUMBER: US/09/079,839
;   CURRENT FILING DATE: 1998-05-15
;   NUMBER OF SEQ ID NOS: 2
;   SOFTWARE: FastSEQ for Windows Version 3.0
;
;   SEQ ID NO 2
;   LENGTH: 816
;   TYPE: DNA
;   ORGANISM: Homo sapiens
US-09-079-839-2

Query Match         62.1%;  Score 379;  DB 3;  Length 816;
Best Local Similarity   79.1%;  Pred. No. 1.2e-112;
Matches   463;  Conservative   0;  Mismatches   120;  Indels   2;  Gaps   1;

Qy      2  AAGGCAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCT   61
           ||||| || | ||||||  |||||||| ||||||||||||| ||||||||| ||||||||
Db     18  AAGGCAAACGCAGAACGTTTCAGAGCCATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCT   77

Qy     62  CTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTGTAGAAAATCCATGAATAGACTGGTGGCA  121
           |||||||||||||||||||||||| || |||||  |||||  || |||||||||||| ||
Db     78  CTTGGGAGCTGCCTACGTGTATCCATCCCCACCCTTGCTGTGTAGAAAATCCATGAATAGACTGGTGGCA  137

Qy    122  GAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGAACCTGATG  181
           |||||||||||||| ||| |||| |||||||||||||| |||| |||||||| ||| |
Db    138  GAGACCTTGGCACTGCTTTCTACTCATCGAACTTCTGATAGGCCAATGGGAGACTTCTGAGG  197

Qy    182  ATTCCTACTCCTGAAAATAAAATCACCACAACTGTCATTAAAGAAGTTTTTCAGGGTATA  241
           || ||| ||| ||||| ||||||||| || ||||| |||||||| ||||||| |||| |
Db    198  ATTCCCTGTTCCCTGTACAATAAAAATCACCAACTGTCACTGAACAAAATCTTTCAGGGATA  257

Qy    242  GACACATTGAAGAACCAAACTGCCCACGGGGAGGCCTGTGGAATAAACTATTCCAAAAACTTG  301
           |||||||||||| ||||| ||||||  ||||||||| |||||||||  ||| |||||||||
Db    258  GGCACACTGGAGGAGTCAAAACTGTGCAAGGGGTACTGTGGAAAGACTATTCCAAAAACTTG  317

Qy    302  TCTTTAATAAAGAAACACATAGAGCGGCCAAAAAAAAAGGGTGTGCAGGAGAAGATGGGAGA  361
           ||| |||||||||  | |||||| |||||||||||||||| | ||||||||||||||||
Db    318  TCCTTAATAAAGAAATACATTGACGGGCCAAAAAAAAAAAGTGTTGGGAGGAGAAAACGGAGA  377

Qy    362  GTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAAACACCGAGTGGACA  421
           ||||||||||| ||||||| || || ||  ||| |||||| ||||||||||||||||
Db    362  GTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAAACACCGAGTGGACA  421
```

RESULT 11
US-09-023-655-1236
Sequence 1236, Application US/09023655
Patent No. 6607879
GENERAL INFORMATION:
  APPLICANT:
  APPLICANT: Cocks, Benjamin G.
  APPLICANT: Susan G. Stuart
  APPLICANT: Jeffrey J. Seilhamer
  TITLE OF INVENTION: COMPOSITION FOR THE DETECTION OF BLOOD CELL GENE
  TITLE OF INVENTION: EXPRESSION
  NUMBER OF SEQUENCES: 1508
  CORRESPONDENCE ADDRESS:
  ADDRESSEE: INCYTE PHARMACEUTICALS, INC.
  STREET: 3174 PORTER DRIVE
  CITY: PALO ALTO
  STATE: CALIFORNIA
  COUNTRY: USA
  ZIP: 94304
  COMPUTER READABLE FORM:
  MEDIUM TYPE: Floppy disk
  COMPUTER: IBM PC compatible
  OPERATING SYSTEM: PC-DOS/MS-DOS
  SOFTWARE: Word Perfect 6.1 for Windows/MS-DOS 6.2
  CURRENT APPLICATION DATA:
  APPLICATION NUMBER: US/09/023,655
  FILING DATE: HEREWITH
  CLASSIFICATION:
  PRIOR APPLICATION DATA:
  APPLICATION NUMBER:
  FILING DATE:
  CLASSIFICATION:
  ATTORNEY/AGENT INFORMATION:
  NAME: Zeller, Karen J.
  REGISTRATION NUMBER: 37,071
  REFERENCE/DOCKET NUMBER: PA-0001 US
  TELECOMMUNICATION INFORMATION:
  TELEPHONE: (650) 855-0555
  TELEFAX: (650) 845-4166
  INFORMATION FOR SEQ ID NO: 1236:
  SEQUENCE CHARACTERISTICS:
  LENGTH: 816 base pairs
  TYPE: nucleic acid
  STRANDEDNESS: single
  TOPOLOGY: linear
  IMMEDIATE SOURCE:
  LIBRARY: GENBANK
  CLONE: g288309
US-09-023-655-1236

Query Match   61.9%;   Score 377.4;   DB 4;   Length 816;
Best Local Similarity   79.0%;   Pred. No. 3.9e-112;
Matches 462;   Conservative   0;   Mismatches 121;   Indels   2;   Gaps   1;

```
Qy    2 AAGGCAAACACTGAACATTTCAGAGCTATGAGAAGATGCTTCTGAATTGAGTTTGCTAGCT  61
          ||||||||||||||||||||||||||||||||||| |||||| ||||||||||||||||||
Db   18 AAGGCAAACGCAGAAGCGTTTCAGGACCCATGAGGATGCTTCGCATTGAGTTTGCTAGCT  77
```

RESULT 12
US-09-322-409-85
Sequence 85, Application US/09322409
Patent No. 6471957
GENERAL INFORMATION:
  APPLICANT:
  APPLICANT: Sim, Gek-Kee
  APPLICANT: Yang, Shumin
  APPLICANT: Dreitz, Matthew J.
  APPLICANT: Wonderling, Ramani S.
  TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
  TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
  FILE REFERENCE: IM-2-C1
  CURRENT APPLICATION NUMBER: US/09/322,409
  CURRENT FILING DATE: 1999-05-28
  EARLIER APPLICATION NUMBER: 60/087,306
  EARLIER FILING DATE: 1998-05-29
  NUMBER OF SEQ ID NOS: 154
  SOFTWARE: Patentin Ver. 2.0
  SEQ ID NO 85
  LENGTH: 345
  TYPE: DNA
  ORGANISM: Canis familiaris
  FEATURE:
  NAME/KEY: CDS
  LOCATION: (1)..(345)
US-09-322-409-85

Query Match   56.6%;   Score 345;   DB 4;   Length 345;
Best Local Similarity   100.0%;   Pred. No. 8.2e-102;
Matches 345;   Conservative   0;   Mismatches   0;   Indels   0;   Gaps   0;

```
Qy   86 TTTGCTGTAGAAAATCCATGAATAGACTGGTGTGGCAGACCTTGACACTGCTCTCCACT 145
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 TTTGCTGTAGAAAATCCATGAATAGACTGGTGTGGCAGACCTTGACACTGCTCTCCACT  60

Qy  146 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATCGATTCCTACTCCTGAAAATAAAAT 205
```

RESULT 13
US-09-322-409-87/c
; Sequence 87, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 87
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris

US-09-322-409-87

Query Match   56.6%;   Score 345;   DB 4;   Length 345;
Best Local Similarity   100.0%;   Pred. No. 8.2e-102;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   86 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTTGGGCAGAGACCTTGACACTGCTGCTCCACT 145
       |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTTGGGCAGAGACCTTGACACTGCTGCTCCACT 60

Qy   146 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 205
       ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120

Qy   206 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 265
       ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180

Qy   266 CACGGGGGAGGCTGTGGATAAACTATTCCAAAAACTGCTTTAATAAAAGAACACATAGAG 325
       ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CACGGGGGAGGCTGTGGATAAACTATTCCAAAAACTGCTTTAATAAAAGAACACATAGAG 240

Qy   326 CGCCAAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 385
       ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 CGCCAAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300

Qy   386 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 430
       |||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 345

RESULT 14
US-09-451-527-85
; Sequence 85, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 85
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(345)

US-09-451-527-85

Query Match   56.6%;   Score 345;   DB 4;   Length 345;
Best Local Similarity   100.0%;   Pred. No. 8.2e-102;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   86 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTTGGGCAGAGACCTTGACACTGCTGCTCCACT 145
       |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTTGGGCAGAGACCTTGACACTGCTGCTCCACT 60

Qy   146 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 205
       ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120

Qy   206 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 265
       ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180

Qy   266 CACGGGGGAGGCTGTGGATAAACTATTCCAAAAACTGCTTTAATAAAAGAACACATAGAG 325
       ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CACGGGGGAGGCTGTGGATAAACTATTCCAAAAACTGCTTTAATAAAAGAACACATAGAG 240

Qy   326 CGCCAAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 385
       ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 CGCCAAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300

Qy   386 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 430
       |||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 345

RESULT 15
US-09-451-527-87/c
; Sequence 87, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409

```
;  EARLIER FILING DATE: 1999-05-28
;  EARLIER APPLICATION NUMBER: 60/087,306
;  EARLIER FILING DATE: 1998-05-29
;  NUMBER OF SEQ ID NOS: 174
;  SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 87
;  LENGTH: 345
;  TYPE: DNA
;  ORGANISM: Canis familiaris
US-09-451-527-87

Query Match        56.6%;  Score 345;  DB 4;  Length 345;
Best Local Similarity   100.0%;  Pred. No. 8.2e-102;
Matches  345;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy    86 TTTGCTGTAGAAAATCCCATGAATAGACTCGGTCGGTCGGCAGAGAGACCTTGACACTTGCTCTCCACT 145
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   345 TTTGCTGTAGAAAATCCCATGAATAGACTCGGTCGGTCGGCAGAGAGACCTTGACACTTGCTCTCCACT 286

Qy   146 CATCGGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAAT 205
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   285 CATCGGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAAT 226

Qy   206 CACCAAACTGTGCATTAAAGAAGTTTTTTCAGGGTATTAGACACATTGAAGAACCAAAACTGCC 265
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   225 CACCAAACTGTGCATTAAAGAAGTTTTTTCAGGGTATTAGACACATTGAAGAACCAAAACTGCC 166

Qy   266 CACCGGGGAGGCTGTCGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 325
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   165 CACCGGGGAGGCTGTCGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 106

Qy   326 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTTACCTG 385
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   105 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTTACCTG 46

Qy   386 CAAGTATTTTCTTGGGTGTAATAAAACACCGGACCCGGAAAGT 430
         |||||||||||||||||||||||||||||||||||||||||||
Db    45 CAAGTATTTTCTTGGGTGTAATAAAACACCGGACCCGGAAAGT 1

Search completed: August  7, 2005, 18:43:08
Job time : 125.226 secs
```

OM nucleic - nucleic search, using sw model

GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

Run on: August 7, 2005, 18:32:58 ; Search time 2938.93 Seconds
                 (without alignments)
                 10057.309 Million cell updates/sec

Title: US-10-787-382-4
Perfect score: 610
Sequence: 1 caaggcaaacactgaacatt........acagatgaaatatattgag 610

Scoring table: IDENTITY NUC
                 Gapop 10.0 , Gapext 1.0

Searched: 4708233 seqs, 2422607955 residues

Total number of hits satisfying chosen parameters: 9416466

Minimum Match 0%
Maximum Match 100%

Post-processing: Minimum Match 0%
                 Maximum Match 100%
                 Listing first 45 summaries

Database :   GenEmbl:*
                 1: gb_ba:*
                 2: gb_htg:*
                 3: gb_in:*
                 4: gb_om:*
                 5: gb_ov:*
                 6: gb_pat:*
                 7: gb_ph:*
                 8: gb_pl:*
                 9: gb_pr:*
                 10: gb_ro:*
                 11: gb_sts:*
                 12: gb_sy:*
                 13: gb_un:*
                 14: gb_vi:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	610	100.0	610	4	AF331919	AF331919 Canis fam
2	610	100.0	610	6	BD211558	BD211558 Canine an
3	610	100.0	610	6	BD211559	BD211559 Canine an
4	610	100.0	610	6	AR241536	AR241536 Sequence
5	610	100.0	610	6	AR241537	AR241537 Sequence
6	610	100.0	610	6	AR254492	AR254492 Sequence
7	610	100.0	610	6	AR254493	AR254493 Sequence
8	405.8	66.5	838	4	AF025436	AF025436 Felis cat
9	402	65.9	402	6	BD211560	BD211560 Canine an
10	402	65.9	402	6	BD211561	BD211561 Canine an
11	402	65.9	402	6	AR241538	AR241538 Sequence
12	402	65.9	402	6	AR241539	AR241539 Sequence
13	402	65.9	402	6	AR254494	AR254494 Sequence
14	402	65.9	402	6	AR254495	AR254495 Sequence
15	401.8	65.9	405	6	AR300436	AR300436 Sequence
16	401.8	65.9	405	6	AX083939	AX083939 Sequence
17	380.6	62.4	816	6	CQ721603	CQ721603 Sequence
18	379	62.1	816	6	E01639	E01639 cDNA encodi
19	379	62.1	816	6	E13591	E13591 cDNA encodi
20	379	62.1	816	6	H3IL5R	X04688 Human mRNA
21	377.4	61.9	816	9	AR380691	AR380691 Sequence
22	377.4	61.9	816	9	HSBCDFIA	X12705 H.sapiens m
23	364.4	59.7	520	4	OAU35038	U35038 Ovis aries
24	357.4	58.6	529	4	SSC1334S2	AJ133452 Sus scrof
25	345	56.6	345	6	BD211562	BD211562 Canine an
26	345	56.6	345	6	BD211563	BD211563 Canine an
27	345	56.6	345	6	AR254496	AR254496 Sequence
28	345	56.6	345	6	AR254497	AR254497 Sequence
29	345	56.6	345	4	AF068770	AF068770 Felis cat
30	341	55.9	405	4	U91947	U91947 Equus cabal
31	341	55.9	405	4	ECU91947	ECU91947 Equus cab
32	337.8	55.4	356	4	AF091133	AF091133 Canis fam
33	329.8	54.1	405	4	Z67872	Z67872 B.taurus mR
34	329.8	54.1	405	4	BTINTLEU5	BTINTLEU5 B.taurus
35	326.6	53.5	459	9	AJ010088	AJ010088 Sus scrof
36	326.6	53.5	459	9	SSC010088	SSC010088 Sus scrof
37	303.4	49.7	354	4	AF051372	AF051372 Felis cat
38	280.2	45.9	405	4	BC066282	BC066282 Homo sapi
39	276.6	45.3	858	6	AX766521	AX766521 Sequence
40	275.4	45.2	858	6	AX766523	AX766523 Sequence
41	275.4	45.1	405	4	CEYIN5A	L26033 Cercocebus
42	273.8	44.9	405	4	MMU19848	U19848 Macaca mula
43	267.4	43.8	564	10	CPU34588	U34588 Cavia porce
44	250	41.0	343	6	AX083948	AX083948 Sequence
45	244.2	40.0	4946	1	PPVIRES	Y07702 Plasmid pPV

ALIGNMENTS

RESULT 1
AF331919
LOCUS   AF331919   610 bp   mRNA   linear   MAM 04-OCT-2001
DEFINITION   Canis familiaris interleukin-5 mRNA, complete cds.
ACCESSION   AF331919
VERSION   AF331919.1 GI:15919180
KEYWORDS   .
SOURCE   Canis familiaris (dog)
  ORGANISM   Canis familiaris
               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
               Mammalia; Eutheria; Laurasiatheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1 (bases 1 to 610)
  AUTHORS   Yang,S.; Sellins,K.S., Weber,E. and McCall,C.
  TITLE   Canine interleukin-5: molecular characterization of the gene and
               expression of biologically active recombinant protein
  JOURNAL   J. Interferon Cytokine Res. 21 (6), 361-367 (2001)
  MEDLINE   21334408
   PUBMED   11440633
REFERENCE   2 (bases 1 to 610)
  AUTHORS   Yang,S.
  TITLE   Direct Submission
  JOURNAL   Submitted (22-DEC-2000) Immunology, Heska Corporation, 1613
               Prospect Parkway, Ft Collins, CO 80525, USA
FEATURES   Location/Qualifiers
     source   1..610
                     /organism="Canis familiaris"
                     /mol_type="mRNA"
                     /db_xref="taxon:9615"
     5'UTR   1..28
     CDS   29..433
                     /note="IL-5"
                     /codon_start=1
                     /product="interleukin-5"
                     /protein_id="AAL10715.1"
                     /db_xref="GI:15919181"
                     /translation="MRMLLNLSLLALGAAVVSAFAVENPMNRLVAETLLLSTHRTWL
                     IGDGNLMIPFPENKRHQLCIKEVFQGIDTLKNQTAHGEAVDKLFQNLSLIKEHIERQK
                     KRCAGERWRVTKFLDYLQVFLGVINTEWTPES"
     3'UTR   433..610
ORIGIN

Query Match   100.0%; Score 610; DB 4; Length 610;

```
RESULT 2

BD211558
BD211558

Best Local Similarity  100.0%;  Pred. No. 6.2e-154;
Matches 610;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy      1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60

Qy     61 TCTTGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAAATCCCATGAAATAGACTGGTGGC 120
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 TCTTGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAAATCCCATGAAATAGACTGGTGGC 120

Qy    121 AGAGACCTTGACACTGCTTCTCCACTCATCGAACTTGGCGTGATAGGCGATGGGAACCTGAT 180
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 AGAGACCTTGACACTGCTTCTCCACTCATCGAACTTGGCGTGATAGGCGATGGGAACCTGAT 180

Qy    181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 240
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 240

Qy    241 AGACACATTGAAGAACCAAAACTGCCCACGGGGAGGCTGTGGATAAAACTATTCCAAAACTT 300
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 AGACACATTGAAGAACCAAAACTGCCCACGGGGAGGCTGTGGATAAAACTATTCCAAAACTT 300

Qy    301 GTCTTTAATAAAAGAACACATAGAGGCGCCAAAAAAAAAGTGTGCAGGGAGGAGAAGATGGAG 360
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 GTCTTTAATAAAAGAACACATAGAGGCGCCAAAAAAAAAGTGTGCAGGGAGGAGAAGATGGAG 360

Qy    361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAAACACCGAGTGGAC 420
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAAACACCGAGTGGAC 420

Qy    421 ACCGGAAAAGTTGAGAACAAACCGGCGCTTATTGTGTAGTGGAAGATTTTGGAGGAATGGTTT 480
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    421 ACCGGAAAAGTTGAGAACAAACCGGCGCTTATTGTGTAGTGGAAGATTTTGGAGGAATGGTTT 480

Qy    481 TTTGGCGATGAGAAATGAGGGGCCAACCAAACAGTAGGGACTTAATGGCCAGTATAACTAAGC 540
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    481 TTTGGCGATGAGAAATGAGGGGCCAACCAAACAGTAGGGACTTAATGGCCAGTATAACTAAGC 540

Qy    541 TTCAGAGACAAAGTAAAATATTTCAGGCCATCCTACTTTATCACTTCACACAGATGAAA 600
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    541 TTCAGAGACAAAGTAAAATATTTCAGGCCATCCTACTTTATCACTTCACACAGATGAAA 600

Qy    601 TATATTTGAG 610
            ||||||||||
Db    601 TATATTTGAG 610
```

```
ORIGIN

Query Match  100.0%;  Score 610;  DB 6;  Length 610;
Best Local Similarity  100.0%;  Pred. No. 6.2e-154;
Matches 610;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy      1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60

Qy     61 TCTTGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAAATCCCATGAAATAGACTGGTGGC 120
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 TCTTGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAAATCCCATGAAATAGACTGGTGGC 120

Qy    121 AGAGACCTTGACACTGCTTCTCCACTCATCGAACTTGGCGTGATAGGCGATGGGAACCTGAT 180
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 AGAGACCTTGACACTGCTTCTCCACTCATCGAACTTGGCGTGATAGGCGATGGGAACCTGAT 180

Qy    181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 240
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 240

Qy    241 AGACACATTGAAGAACCAAAACTGCCCACGGGGAGGCTGTGGATAAAACTATTCCAAAACTT 300
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 AGACACATTGAAGAACCAAAACTGCCCACGGGGAGGCTGTGGATAAAACTATTCCAAAACTT 300

Qy    301 GTCTTTAATAAAAGAACACATAGAGGCGCCAAAAAAAAAGTGTGCAGGGAGGAGAAGATGGAG 360
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 GTCTTTAATAAAAGAACACATAGAGGCGCCAAAAAAAAAGTGTGCAGGGAGGAGAAGATGGAG 360

Qy    361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAAACACCGAGTGGAC 420
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAAACACCGAGTGGAC 420

Qy    421 ACCGGAAAAGTTGAGAACAAACCGGCGCTTATTGTGTAGTGGAAGATTTTGGAGGAATGGTTT 480
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    421 ACCGGAAAAGTTGAGAACAAACCGGCGCTTATTGTGTAGTGGAAGATTTTGGAGGAATGGTTT 480

Qy    481 TTTGGCGATGAGAAATGAGGGGCCAACCAAACAGTAGGGACTTAATGGCCAGTATAACTAAGC 540
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    481 TTTGGCGATGAGAAATGAGGGGCCAACCAAACAGTAGGGACTTAATGGCCAGTATAACTAAGC 540

Qy    541 TTCAGAGACAAAGTAAAATATTTCAGGCCATCCTACTTTATCACTTCACACAGATGAAA 600
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    541 TTCAGAGACAAAGTAAAATATTTCAGGCCATCCTACTTTATCACTTCACACAGATGAAA 600

Qy    601 TATATTTGAG 610
            ||||||||||
Db    601 TATATTTGAG 610
```

```
LOCUS           BD211558          610 bp    DNA    linear   PAT 17-JUL-2003
DEFINITION      Canine and feline immunoregulatory proteins, nucleic acid
                molecules and method of using the same.
ACCESSION       BD211558
VERSION         BD211558.1  GI:33021328
KEYWORDS        JP 200251610-A/64.
SOURCE          Canis familiaris (dog)
  ORGANISM      Canis familiaris
                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE       1  (bases 1 to 610)
  AUTHORS       Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE         Canine and feline immunoregulatory proteins, nucleic acid molecules
                and method of using the same
  JOURNAL       Patent: JP 200251610-A 64 04-JUN-2002;
                HESKA CORP

COMMENT         Canis familiaris (dog)
  OS            JP 200251610-A/64
  PN            04-JUN-2002
  PD            28-MAY-1998  JP  200551002
  PF            29-MAY-1998  US  60/087306
  PR            GRKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
  PI            C12N15/09,A61K31/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
```

FEATURES   Location/Qualifiers
     source   1..610
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9615"
     CDS   (29)..(430).
                     Location/Qualifiers

  PC   A61K39/395,
  PC   A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,C07K14/535,
  PC   C07K14/54,
  PC   C07K14/56,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
  PC   G01N33/15,
  PC   G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC
  CC   Canine
  CC   and feline immunoregulatory proteins, nucleic acid CC
  CC   molecules and
  CC   method of using the same
  FH   Key
  FT   Location/Qualifiers

```
RESULT 3

BD211559/c
BD211559

LOCUS           BD211559          610 bp    DNA    linear   PAT 17-JUL-2003
DEFINITION      Canine and feline immunoregulatory proteins, nucleic acid molecules
                and method of using the same.
ACCESSION       BD211559
```

```
VERSION     BD211559.1  GI:33021329
KEYWORDS    JP 2002516104-A/65.
SOURCE      Canis familiaris
  ORGANISM  Canis familiaris (dog)
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1  (bases 1 to 610)
  AUTHORS   Sim,G.; Yang,S.; Dreitz,M.J. and Wonderling,R.S.
  TITLE     Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same
  JOURNAL   Patent: JP 2002516104-A 65 04-JUN-2002;
            HESKA CORP
COMMENT     Canis familiaris (dog)
OS   Canis familiaris (dog)
PN   JP 2002516104-A/65
PD   04-JUN-2002
PF   28-MAY-1999 JP 200551002
PR   29-MAY-1998 US 60/087306
PI   GEKKEE SIM, SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
     C12N15/09,A61K31/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
PC   A61K39/395,
PC   A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,C07K14/535,
PC   C07K14/54,
PC   C07K14/56,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
PC   G01N33/15,
PC   G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC  Canine
     and feline immunoregulatory proteins, nucleic acid  CC
     molecules and
CC   method of using the same
FEATURES             Location/Qualifiers
FT   source          1..610
FT                   /organism="Canis familiaris"
FH   Key             Location/Qualifiers
FT   source          1..610
FT                   /organism='Canis familiaris (dog)'.
ORIGIN

        Query Match     Best Local Similarity   100.0%;
        Matches 610;    Conservative    0;    Mismatches    0;    Indels    0;    Gaps    0;
                        Score 610;  DB 6;  Length 610;
                        Pred. No. 6.2e-154;

Qy    1 CAAGGCAAACACTGAACACATTTCAGAGCTYATGAGAGAATGCTTCTGAAATTGAGTTGCTAGC 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  610 CAAGGCAAACACTGAACATTTCAGAGCTYATGAGAGAATGCTTCTGAAATTGAGTTGCTAGC 551

Qy   61 TCTTGGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  550 TCTTGGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC 491

Qy  121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGAACCTGAT 180
        ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  490 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGAACCTGAT 431

Qy  181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTCAGGGTAT 240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  430 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTCAGGGTAT 371

Qy  241 AGACACAATTGAAGAACCAAAACTGCCCACGGGGAGGAGGCGTTGGATAAAACTT 300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  370 AGACACAATTGAAGAACCAAAACTGCCCACGGGGAGGAGGCGTTGGATAAAACTT 311

Qy  301 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAAGGTGTGCAGGAAGAGATGGAG 360
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  310 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAAGGTGTGCAGGAAGAGATGGAG 251

Qy  361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAAACACCAGTGGAC 420
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  250 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAAACACCAGTGGAC 191

Qy  421 ACCGGAAAGTTGAGACAAAACCGGCTTATTGTTGGGGAAGAATGGTTT 480
        ||||||||||||||||||||||||||||||||||||||||||||||
Db  190 ACCGGAAAGTTGAGACAAAACCGGCTTATTGTTGGGGAAGAATGGTTT 131

Qy  481 TTTGGGCGATGAGAATGAGGGCGCCAACCAACAGTAGGGACTTAATGGCCAGTATAAACTAAGC 540
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  130 TTTGGGCGATGAGAATGAGGGCGCCAACCAACAGTAGGGACTTAATGGCCAGTATAAACTAAGC 71

Qy  541 TTCAGAGGACAAAGTAAAATATTTCAGGGCAATCCTACTACTTTTATCACTTCACACAGATGAAA 600
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   70 TTCAGAGGACAAAGTAAAATATTTCAGGGCAATCCTACTACTTTTATCACTTCACACAGATGAAA 11

Qy  601 TATATTTGAG 610
        ||||||||||
Db   10 TATATTTGAG 1
```

```
RESULT 4
LOCUS       AR241536      610 bp    DNA    linear    PAT 20-DEC-2002
DEFINITION  Sequence 80 from patent US 6471957.
ACCESSION   AR241536
VERSION     AR241536.1  GI:27287245
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 610)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Canine IL-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 80 29-OCT-2002;
FEATURES             Location/Qualifiers
     source          1..610
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

        Query Match     Best Local Similarity   100.0%;
        Matches 610;    Conservative    0;    Mismatches    0;    Indels    0;    Gaps    0;
                        Score 610;  DB 6;  Length 610;
                        Pred. No. 6.2e-154;

Qy    1 CAAGGCAAACACTGAACACATTTCAGAGCTYATGAGAGAATGCTTCTGAAATTGAGTTGCTAGC 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 CAAGGCAAACACTGAACATTTCAGAGCTYATGAGAGAATGCTTCTGAAATTGAGTTGCTAGC 60

Qy   61 TCTTGGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 TCTTGGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC 120

Qy  121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGAACCTGAT 180
        ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGAACCTGAT 180

Qy  181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTCAGGGTAT 240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTCAGGGTAT 240

Qy  241 AGACACAATTGAAGAACCAAAACTGCCCACGGGGAGGAGGCGTTGGATAAAACTT 300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 AGACACAATTGAAGAACCAAAACTGCCCACGGGGAGGAGGCGTTGGATAAAACTT 300

Qy  301 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAAGGTGTGCAGGAAGAGATGGAG 360
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAAGGTGTGCAGGAAGAGATGGAG 360

Qy  361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAAACACCAGTGGAC 420
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAAACACCAGTGGAC 420

Qy  421 ACCGGAAAGTTGAGACAAAACCGGCTTATTGTTGGGGAAGAATGGTTT 480
        ||||||||||||||||||||||||||||||||||||||||||||||
Db  421 ACCGGAAAGTTGAGACAAAACCGGCTTATTGTTGGGGAAGAATGGTTT 480

Qy  481 TTTGGGCGATGAGAATGAGGGCGCCAACCAACAGTAGGGACTTAATGGCCAGTATAAACTAAGC 540
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  481 TTTGGGCGATGAGAATGAGGGCGCCAACCAACAGTAGGGACTTAATGGCCAGTATAAACTAAGC 540
```

```
Qy     541 TTCAGAGACAAAAGTAAATATTTCAGGCCATCCTACTTACTTTATCACTTCACACAGATGAAA 600
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     541 TTCAGAGACAAAAGTAAATATTTCAGGCCATCCTACTTACTTTATCACTTCACACAGATGAAA 600

Qy     601 TATATTTGAG 610
           ||||||||||
Db     601 TATATTTGAG 610
```

RESULT 5

LOCUS   AR241537/c

Qy   601 TATATTTGAG 610
           ||||||||||
Db   541 TTCAGAGACAAAAGTAAATATTTCAGGCCATCCTACTTACTTTATCACTTCACACAGATGAAA 600

LOCUS   AR241537   610 bp   DNA   linear   PAT 20-DEC-2002
DEFINITION Sequence 82 from patent US 6471957.
ACCESSION   AR241537
VERSION   AR241537.1 GI:27287246
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 610)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine Il-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 82 29-OCT-2002;
FEATURES   Location/Qualifiers
     source   1..610
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match   100.0%; Score 610; DB 6; Length 610;
Best Local Similarity   100.0%; Pred. No. 6.2e-154;
Matches 610; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

```
Qy       1 CAAGGCAAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     610 CAAGGCAAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 551

Qy      61 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTGAGAAAATCCCATGAAATAGACTGGTGGC 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     550 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTGAGAAAATCCCATGAAATAGACTGGTGGC 491

Qy     121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGAACCTGAT 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     490 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGAACCTGAT 431

Qy     181 GATTCCTACTCCTGAAAAATAAAAATCACCAACTGTCCATTAAAGAAGTTTTTCAGGGTAT 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     430 GATTCCTACTCCTGAAAAATAAAAATCACCAACTGTCCATTAAAGAAGTTTTTCAGGGTAT 371

Qy     241 AGACACATTGAAGAACCAAAACTGCCCACGGGGAGGCTGTGGATAAACTATTCCAAAACTT 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     370 AGACACATTGAAGAACCAAAACTGCCCACGGGGAGGCTGTGGATAAACTATTCCAAAACTT 311

Qy     301 GTCTTTAATAAAAGAACACATAGAGAGCGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 360
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     310 GTCTTTAATAAAAGAACACATAGAGAGCGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 251

Qy     361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGAC 420
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     250 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGAC 191

Qy     421 ACCGGAAAAGTTGAGACACAAACCGGCTTATTGTAGTGGAACAGTTTTGGAGAAGAATGGTTT 480
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     190 ACCGGAAAAGTTGAGACACAAACCGGCTTATTGTAGTGGAACAGTTTTGGAGAAGAATGGTTT 131

Qy     481 TTTGGGGATGAGAATGAGGGGCCAACCACAACAGTAGGGACTTAAATGGCCAGTATAACTAAGC 540
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     130 TTTGGGGATGAGAATGAGGGGCCAACCACAACAGTAGGGACTTAAATGGCCAGTATAACTAAGC 71

Qy     541 TTCAGAGACAAAAGTAAATATTTCAGGCCATCCTACTTACTTTATCACTTCACACAGATGAAA 600
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      70 TTCAGAGACAAAAGTAAATATTTCAGGCCATCCTACTTACTTTATCACTTCACACAGATGAAA 11
```

Qy   601 TATATTTGAG 610
           ||||||||||
Db   10 TATATTTGAG 1

RESULT 6

LOCUS   AR254492

Qy   601 TATATTTGAG 610
           ||||||||||

LOCUS   AR254492   610 bp   DNA   linear   PAT 20-DEC-2002
DEFINITION Sequence 80 from patent US 6482403.
ACCESSION   AR254492
VERSION   AR254492.1 GI:27303380
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 610)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Caniney Il-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 80 19-NOV-2002;
FEATURES   Location/Qualifiers
     source   1..610
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match   100.0%; Score 610; DB 6; Length 610;
Best Local Similarity   100.0%; Pred. No. 6.2e-154;
Matches 610; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

```
Qy       1 CAAGGCAAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 CAAGGCAAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60

Qy      61 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTGAGAAAATCCCATGAAATAGACTGGTGGC 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTGAGAAAATCCCATGAAATAGACTGGTGGC 120

Qy     121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGAACCTGAT 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGAACCTGAT 180

Qy     181 GATTCCTACTCCTGAAAAATAAAAATCACCAACTGTCCATTAAAGAAGTTTTTCAGGGTAT 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 GATTCCTACTCCTGAAAAATAAAAATCACCAACTGTCCATTAAAGAAGTTTTTCAGGGTAT 240

Qy     241 AGACACATTGAAGAACCAAAACTGCCCACGGGGAGGCTGTGGATAAACTATTCCAAAACTT 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     241 AGACACATTGAAGAACCAAAACTGCCCACGGGGAGGCTGTGGATAAACTATTCCAAAACTT 300

Qy     301 GTCTTTAATAAAAGAACACATAGAGAGCGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 360
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     301 GTCTTTAATAAAAGAACACATAGAGAGCGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 360

Qy     361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGAC 420
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGAC 420

Qy     421 ACCGGAAAAGTTGAGACACAAACCGGCTTATTGTAGTGGAACAGTTTTGGAGAAGAATGGTTT 480
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     421 ACCGGAAAAGTTGAGACACAAACCGGCTTATTGTAGTGGAACAGTTTTGGAGAAGAATGGTTT 480

Qy     481 TTTGGGGATGAGAATGAGGGGCCAACCACAACAGTAGGGACTTAAATGGCCAGTATAACTAAGC 540
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     481 TTTGGGGATGAGAATGAGGGGCCAACCACAACAGTAGGGACTTAAATGGCCAGTATAACTAAGC 540

Qy     541 TTCAGAGACAAAAGTAAATATTTCAGGCCATCCTACTTACTTTATCACTTCACACAGATGAAA 600
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     541 TTCAGAGACAAAAGTAAATATTTCAGGCCATCCTACTTACTTTATCACTTCACACAGATGAAA 600

Qy     601 TATATTTGAG 610
           ||||||||||
Db     601 TATATTTGAG 610
```

RESULT 7

```
LOCUS       AR254493               610 bp    DNA     linear   PAT 20-DEC-2002
DEFINITION  Sequence 82 from patent US 6482403.
ACCESSION   AR254493
VERSION     AR254493.1  GI:27303381
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 610)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Canine IL-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 82 19-NOV-2002;
FEATURES             Location/Qualifiers
     source          1..610
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN
```

Query Match 100.0%; Score 610; DB 6; Length 610;
Best Local Similarity 100.0%; Pred. No. 6.2e-154;
Matches 610; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy      1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    610 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 551

Qy     61 TCTTGGGGCTGCCTCCTATGTTTCTGCCTTTGCTGTAGAGAAATCCCATGAAATAGAACT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    550 TCTTGGGGCTGCCTCCTATGTTTCTGCCTTTGCTGTAGAGAAATCCCATGAAATAGAACT 491

Qy    121 AGAGACCTTGACACTGCTCTCCACTCACTCATCGAACTCGGCTGATTAGGCGGATGGGAC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    490 AGAGACCTTGACACTGCTCTCCACTCACTCATCGAACTCGGCTGATTAGGCGGATGGGAC 431

Qy    181 GATTCCTACTCCTGAAAAATAAAAAATCACCAACTCGTGTCATTAAAGAAGTTTTTCAGG 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    430 GATTCCTACTCCTGAAAAATAAAAAATCACCAACTCGTGTCATTAAAGAAGTTTTTCAGG 371

Qy    241 AGACACATTGAAGAACCAAAACTGCCCACGCGGGGAGGCTGTGGATAAAACTATTCCAAA 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    370 AGACACATTGAAGAACCAAAACTGCCCACGCGGGGAGGCTGTGGATAAAACTATTCCAAA 311

Qy    301 GTCTTTAATAAAAGAACACATAGAGAGCCCCAAAAAAAAAAAAGTGTGCAGGAGAAGATG 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    310 GTCTTTAATAAAAGAACACATAGAGAGCCCCAAAAAAAAAAAAGTGTGCAGGAGAAGATG 251

Qy    361 AGTGACAAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTCGA 420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    250 AGTGACAAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTCGA 191

Qy    421 ACCGGAAAAGTTGAGCAACAAAACCGGCTTATTGTAGTGGAGGAAGAGGAAGAATGGTTT 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    190 ACCGGAAAAGTTGAGCAACAAAACCGGCTTATTGTAGTGGAGGAAGAGGAAGAATGGTTT 131

Qy    481 TTTGGGCCGATGAGAATGAGGGCCCAACCAACAGTAGGGACTTAAGTGGCCAGTATAAGC 540
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    130 TTTGGGCCGATGAGAATGAGGGCCCAACCAACAGTAGGGACTTAAGTGGCCAGTATAAGC 71

Qy    541 TTCAGAGACAAAGTAAATAATATTTCAGGCGATCCTACTACTTATCACTTCACACAGATG 600
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     70 TTCAGAGACAAAGTAAATAATATTTCAGGCGATCCTACTACTTATCACTTCACACAGATG 11

Qy    601 TATATTTGAG 610
          ||||||||||
Db     10 TATATTTGAG 1
```

RESULT 8

```
LOCUS       AF025436               838 bp    mRNA    linear   MAM 20-OCT-1998
DEFINITION  Felis catus interleukin-5 (IL-5) mRNA, complete cds.
ACCESSION   AF025436
VERSION     AF025436.1  GI:3228518
KEYWORDS    .
SOURCE      Felis catus (cat)
  ORGANISM  Felis catus
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.
REFERENCE   1  (bases 1 to 838)
  AUTHORS   Padrid,P.A., Qin,Y., Wells,T.N., Solway,J. and Camoretti-Mercado,B.
  TITLE     Sequence and structural analysis of feline interleukin-5 cDNA
  JOURNAL   Am. J. Vet. Res. 59 (10), 1263-1269 (1998)
  MEDLINE   98452719
  PUBMED    9781459
REFERENCE   2  (bases 1 to 838)
  AUTHORS   Padrid,P.A., Qin,Y., Wells,T.N.C., Solway,J. and
            Camoretti-Mercado,B.
  TITLE     Direct Submission
  JOURNAL   Submitted (15-SEP-1997) Medicine, University of Chicago, 5841 S.
            Maryland Avenue, Chicago, IL 60637, USA
FEATURES             Location/Qualifiers
     source          1..838
                     /organism="Felis catus"
                     /mol_type="mRNA"
                     /db_xref="taxon:9685"
                     /cell_type="activated feline peripheral blood mononuclear
                     cells"
     gene            1..838
                     /gene="IL-5"
     CDS             45..449
                     /gene="IL-5"
                     /note="cytokine"
                     /codon_start=1
                     /product="interleukin-5"
                     /protein_id="AAC64505.1"
                     /db_xref="GI:3228519"
                     /translation="MRMLLHLSLLALGAXVVSAIAVQSPMNRLVAETLALLSTHRTLL
                     IGDGNLMIPTPEHNNHQLCIEEVFQGIDTLKNRTVPGDAVEKLFRNLSLIKEHIDRQK
                     KKCGGERWVRVKKFLDYLIQVFLGVINTEWTMES"
ORIGIN
```

Query Match 66.5%; Score 405.8; DB 4; Length 838;
Best Local Similarity 84.8%; Pred. No. 9.7e-99;
Matches 498; Conservative 0; Mismatches 67; Indels 22; Gaps 3;

```
Qy      1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     17 CAAAGCAAACACTGAACATTTGAGAGCCCATAGAAATGCTTCTGCAATTTGAGTTTGCTAGC 76

Qy     61 TCTTGGGGCTGCCTCCTATGTTTCTGCCTTTGCTGTAGAGAAATCCCATGAAATAGAACT 120
          |||||||||||||||||||||||||||||||||||||||||||||||
Db     77 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTAGAGAAATCCCATGAAATAGAACT 136

Qy    121 AGAGACCTTGACACTGCTCTCCACTCACTCATCGAACTCGGCTGATTAGGCGGATGGGAC 180
          ||||||||||||||||||||||||||||||||||||||||
Db    137 AGAGACCTTGACACTGCTCTCCACTCACTCATCGAACTCGGCTGATTAGGCGGATGGGAC 196

Qy    181 GATTCCTACTCCTGAAAAATAAAAAATCACCAACTCGTGTCATTAAAGAAGTTTTTCAGG 240
          |||||||||||||||||||||||||||||||||||
Db    197 GATTCCTACTCCTGAAAAATAACAAATCACCAACTGTGTGCATTGAAGAAGTCTTCAGGGTAT 256

Qy    241 AGACACATTGAAGAACCAAAACTGCCCACGCGGGGAGGCTGTGGATAAAACTATTCCAAA 300
          |||||||||||||||||||||||||
Db    257 AGACACATTAAAGAATGGCACCGTGCCCAAAAAAAAAAAAAGTGTGCAGGAGAAGATGAGT 316

Qy    301 GTCTTTAATAAAAGAACACATAGAGAGCCCCAAAAAAAAAAAAGTGTGCAGGAGAAGATG 360
          ||||||||||||||||||||||||||||||
Db    317 GTCTTTAATAAAAGAACACATAGAGAGCCCCAAAAAAAAAAAGGTGGACGAGAAAGATGGAG 376

Qy    361 AGTGACAAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTCGA 420
          |||||||||||||||||||||
Db    377 AGTAAAAAAGTTCCTAGACTACCTGCAAGTGTTTCTTGGGTGTAATAAACACCGAGTGGAC 436
```

RESULT 9

```
LOCUS       BD211560       402 bp    DNA    linear   PAT 17-JUL-2003
DEFINITION  Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same.
ACCESSION   BD211560
VERSION     BD211560.1  GI:33021330
KEYWORDS    JP 2002516104-A/66.
SOURCE      Canis familiaris
  ORGANISM  Canis familiaris (dog)
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1  (bases 1 to 402)
  AUTHORS   Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same
  JOURNAL   Patent: JP 2002516104-A 66 04-JUN-2002;
            HESKA CORP
OS          Canis familiaris (dog)
PN          JP 2002516104-A/66
PD          04-JUN-2002
PF          29-MAY-1998 JP 2000551002
PR          28-MAY-1999 JP 2000551002
PI          GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
            C12N15/09,A61K31/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
PC          A61K39/395,
PC          A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,C07K14/535,
PC          C07K14/54,
PC          C07K14/56,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
            G01N33/15,
PC          G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC   Canine
            and feline immunoregulatory proteins, nucleic acid CC
            molecules and
CC          method of using the same
FEATURES             Location/Qualifiers
FH          Key             Location/Qualifiers
FT          source          1..402
FT                          /organism="Canis familiaris"
                            /mol_type="genomic DNA"
                            /db_xref="taxon:9615"
```

ORIGIN

Query Match 65.9%; Score 402; DB 6; Length 402;
Best Local Similarity 100.0%; Pred. No. 1.1e-97;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGTCTGCCTGTGGGGCTGCCTTT     88
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGTCTGCCTATGTTTCTGCCTTT     60

Qy    89 GCTGTGAGAAATCCCATGAATAGACTGGTGCCAGAGAACCTTGACACTGCTCTCCACTCAT    148
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    61 GCTGTGAGAAATCCCATGAATAGACTGGTGCCAGAGAACCTTGACACTGCTCTCCACTCAT    120

Qy   149 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC    208
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC    180
```

RESULT 10

```
LOCUS       BD211561/c     402 bp    DNA    linear   PAT 17-JUL-2003
DEFINITION  Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same.
ACCESSION   BD211561
VERSION     BD211561.1  GI:33021331
KEYWORDS    JP 2002516104-A/67.
SOURCE      Canis familiaris
  ORGANISM  Canis familiaris (dog)
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1  (bases 1 to 402)
  AUTHORS   Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same
  JOURNAL   Patent: JP 2002516104-A 67 04-JUN-2002;
            HESKA CORP
OS          Canis familiaris (dog)
PN          JP 2002516104-A/67
PD          04-JUN-2002
PF          29-MAY-1999 JP 2000551002
PR          28-MAY-1999 JP 2000551002
PI          GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
            C12N15/09,A61K31/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
PC          A61K39/395,
PC          A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,C07K14/535,
PC          C07K14/54,
PC          C07K14/56,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
            G01N33/15,
PC          G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC   Canine
            and feline immunoregulatory proteins, nucleic acid CC
            molecules and
CC          method of using the same
FEATURES             Location/Qualifiers
FH          Key             Location/Qualifiers
FT          source          1..402
FT                          /organism="Canis familiaris"
                            /mol_type="genomic DNA"
                            /db_xref="taxon:9615"
```

ORIGIN

Query Match 65.9%; Score 402; DB 6; Length 402;
Best Local Similarity 100.0%; Pred. No. 1.1e-97;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGTCTGCCTGTGGGGCTGCCTTT     88
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGTCTGCCTATGTTTCTGCCTTT     88

Qy    89 GCTGTGAGAAATCCCATGAATAGACTGGTGCCAGAGAACCTTGACACTGCTCTCCACTCAT    148
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   342 GCTGTGAGAAATCCCATGAATAGACTGGTGCCAGAGAACCTTGACACTGCTCTCCACTCAT    283
```

RESULT 9 (continued)

```
Qy   421 ACCGGAAAGTTGAGAACAAACCGGCTTATGTCGTTGGAGATTTGGGAGAAGAA-------    474
          |||||||||||||||||||||||||||||||||||||||||||||| |||||||
Db   437 AATGGAAAGTTGAGATGAGAACTGGGTTGTTGCAGTGAAAGATTCTGTAGGAGAAGAA    496

Qy   475 -TGGTTTTTGGGCGATGAGAAATGAGGGGCCAACCACAGTAGGGACTTAATGGCCAGTATA    533
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   497 TGTTTATTTTTTGCAATGAGAATGAGGGCCCAACC-----------AACGGTCACTGTA    542

Qy   534 ACTAAGCTTCAGAGACAAAGTAAATATTTCAGGCATCCTACTACTTT    580
          ||||||||||||||||||||||||||||||||||||||||||||
Db   543 ATTAAACTTCAGATGCAAAG-CAATTTTTCAGGCATACTGCTACTTTT    588
```

RESULT 10 (continued)

```
Qy   209 CAACTGTGCATTAAAGAGAAGTTTTTTCAGGGTATAGACACATTGGAGAACCAAAACTGCCAC    268
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CAACTGTGCATTAAAGAAGTTTTCAGGGTATAGACACATTGGAGAACCAAAACTGCCAC    240

Qy   269 GGGGAGGGCTGTGGATAAACTATTCCAAAACTGTCTTAATTAATGTGTCTTAATTAATAGA    328
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 GGGGAGGGCTGTGGATAAACTATTCCAAAACTTGTCTTAATTAATAAAAGAACACATTAGAGCGC    300

Qy   329 CAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA    388
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAAAAAAAGGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA    360

Qy   389 GTATTTCTTGGTGTAATAAGACACCGGACACCGGAAAGT    430
          ||||||||||||||||||||||||||||||||||||||||
Db   361 GTATTTCTTGGTGTAATAAGACACCGGAGTGGGACACCGGAAAGT    402
```

RESULT 11

```
LOCUS       AR241538          402 bp    DNA     linear   PAT 20-DEC-2002
DEFINITION  Sequence 83 from patent US 6471957.
ACCESSION   AR241538
VERSION     AR241538.1  GI:27287247
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Canine IL-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 83 29-OCT-2002;
FEATURES             Location/Qualifiers
     source          1..402
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN
```

```
Query Match             65.9%;  Score 402;  DB 6;  Length 402;
Best Local Similarity   100.0%;
Matches  402;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy    29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCCTATGTTTCTGCCTTT 88
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCCTATGTTTCTGCCTTT 60

Qy    89 GCTGTGAAAAATCCCATGAATAGACTGGTGGGCAGAGAGACCTTGACACTGCTCCACTCAT 148
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    61 GCTGTGAAAAATCCCATGAATAGACTGGTGGGCAGAGAGACCTTGACACTGCTCCACTCAT 120

Qy   149 CGAACTTGGCTGGATAGGCGGATGGGAGGGAACCTGATCGTAGTCCTACTTCCTGAAAATAAAAATCAC 208
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CGAACTTGGCTGGATAGGCGGATGGGAGGGAACCTGATCGTAGTCCTACTTCCTGAAAATAAAAATCAC 180

Qy   209 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 268
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240

Qy   269 GGGGGAGGCTGTGGGATAAACTATTCCAAAAACTATTCTTAATAAAAGAACACATAGAGCGC 328
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 GGGGGAGGCTGTGGGATAAACTATTCCAAAAACTATTCTTAATAAAAGAACACATAGAGCGC 300

Qy   329 CAAAAAAAAAGGTGTCCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAAAAAAAAGGTGTCCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Qy   389 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCCGGAAAGT 430
         |||||||||||||||||||||||||||||||||||||||||||||
Db   361 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCCGGAAAGT 402
```

RESULT 12

```
LOCUS       AR241539          402 bp    DNA     linear   PAT 20-DEC-2002
DEFINITION  Sequence 84 from patent US 6471957.
ACCESSION   AR241539
VERSION     AR241539.1  GI:27287248
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Canine IL-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 84 29-OCT-2002;
FEATURES             Location/Qualifiers
     source          1..402
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN
```

```
Query Match             65.9%;  Score 402;  DB 6;  Length 402;
Best Local Similarity   100.0%;
Matches  402;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy    29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCCTATGTTTCTGCCTTT 88
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCCTATGTTTCTGCCTTT 60

Qy    89 GCTGTGAAAAATCCCATGAATAGACTGGTGGGCAGAGAGACCTTGACACTGCTCCACTCAT 148
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    61 GCTGTAGAAAAATCCCATGAATAGACTGGTGGGCAGAGAGACCTTGACACTGCTCCACTCAT 120

Qy   149 CGAACTTGGCTGGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 208
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CGAACTTGGCTGGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180

Qy   209 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 268
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240

Qy   269 GGGGGAGGCTGTGGGATAAACTATTCCAAAAACTATTCTTAATAAAAGAACACATAGAGCGC 328
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 GGGGGAGGCTGTGGGATAAACTATTCCAAAAACTATTCTTAATAAAAGAACACATAGAGCGC 300

Qy   329 CAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Qy   389 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCCGGAAAGT 430
         |||||||||||||||||||||||||||||||||||||||||||||
Db   361 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCCGGAAAGT 402
```

RESULT 13

```
LOCUS       AR254494          402 bp    DNA     linear   PAT 20-DEC-2002
DEFINITION  Sequence 83 from patent US 6482403.
ACCESSION   AR254494
VERSION     AR254494.1  GI:27303382
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Caniney IL-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 83 19-NOV-2002;
FEATURES             Location/Qualifiers
     source          1..402
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN
```

ORIGIN

```
Query Match    65.9%;  Score 402;  DB 6;  Length 402;
Best Local Similarity   100.0%;  Pred. No. 1.1e-97;
Matches 402;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy      29 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT   88
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT   60

Qy      89 GCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT   148
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 GCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT   120

Qy     149 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTCTGAAAATAAAATCAC   208
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTCTGAAAATAAAATCAC   180

Qy     209 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC   268
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC   240

Qy     269 GGGGGAGGGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACAACATAGAGCGC   328
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     241 GGGGGAGGGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACAACATAGAGCGC   300

Qy     329 CAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA   388
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     301 CAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA   360

Qy     389 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT   430
           ||||||||||||||||||||||||||||||||||||||||||
Db     361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT   402
```

RESULT 14
```
LOCUS       AR254495                   402 bp    DNA    linear   PAT 20-DEC-2002
DEFINITION  Sequence 84 from patent US 6482403.
ACCESSION   AR254495
VERSION     AR254495.1  GI:27303383
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Canine IL-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 84 19-NOV-2002;
FEATURES             Location/Qualifiers
     source          1..402
                     /organism="unknown"
                     /mol_type="genomic DNA"
```

ORIGIN
```
Query Match    65.9%;  Score 402;  DB 6;  Length 402;
Best Local Similarity   100.0%;  Pred. No. 1.1e-97;
Matches 402;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy      29 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT   88
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     402 ATGAGAAATGCTTCTGAAATTTGCTAGCTCTTGGGGCCTGCCTATGTTTCTGCCTTT   343

Qy      89 GCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT   148
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     342 GCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT   283

Qy     149 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTCTGAAAATAAAATCAC   208
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     282 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTCTGAAAATAAAATCAC   223

Qy     209 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC   268
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     222 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC   163
```

RESULT 15
```
LOCUS       AR300436                   405 bp    DNA    linear   PAT 12-JUN-2003
DEFINITION  Sequence 1 from patent US 6537781.
ACCESSION   AR300436
VERSION     AR300436.1  GI:31687875
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 405)
  AUTHORS   Guo,H., Lawton,R., Mermer,B. and Aiyappa,A.P.
  TITLE     Methods and compositions concerning canine interleukin 5
  JOURNAL   Patent: US 6537781-A 1 25-MAR-2003;
FEATURES             Location/Qualifiers
     source          1..405
                     /organism="unknown"
                     /mol_type="genomic DNA"
```

ORIGIN
```
Query Match    65.9%;  Score 401.8;  DB 6;  Length 405;
Best Local Similarity   99.5%;  Pred. No. 1.2e-97;
Matches 403;  Conservative   0;  Mismatches   2;  Indels   0;  Gaps   0;

Qy      29 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT   88
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT   60

Qy      89 GCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT   148
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 GCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT   120

Qy     149 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTCTGAAAATAAAATCAC   208
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTCTGAAAATAAAATCAC   180

Qy     209 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC   268
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC   240

Qy     269 GGGGGAGGGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACAACATAGAGCGC   328
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     241 GGGGGAGGGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACAACATAGAGCGC   300

Qy     329 CAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA   388
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     301 CAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA   360

Qy     389 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGTTGA   433
           |||||||||||||||||||||||||||||||||||||||||||||
Db     361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGTTGA   405
```

Search completed: August 8, 2005, 05:12:04
Job time : 2942.93 secs

OM nucleic - nucleic search, using sw model

GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

Run on: August 7, 2005, 19:25:03 ; Search time 408.892 Seconds
(without alignments)
8831.282 Million cell updates/sec

Title: US-10-787-382-4
Perfect score: 610
Sequence: 1 caaggcaaacactgaacatt..........acagatgaaatatattgag 610
Scoring table: IDENTITY NUC
Gapop 10.0 , Gapext 1.0
Searched: 4390206 seqs, 295870667 residues
Total number of hits satisfying chosen parameters: 8780412

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
listing first 45 summaries

Database :
N_Geneseq_16Dec04:*
1: geneseqn1980s:*
2: geneseqn1990s:*
3: geneseqn2000s:*
4: geneseqn2001as:*
5: geneseqn2001bs:*
6: geneseqn2002as:*
7: geneseqn2002bs:*
8: geneseqn2003as:*
9: geneseqn2003bs:*
10: geneseqn2003cs:*
11: geneseqn2003ds:*
12: geneseqn2004as:*
13: geneseqn2004bs:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	610	100.0	610	3	AAZ55546	Aaz55546 Canine in
2	610	100.0	610	3	AAZ55547	Aaz55547 Canine in
3	405.8	66.5	838	3	AAZ44265	Aaz44265 Porcine I
4	402	65.9	402	3	AAZ55548	Aaz55548 Canine in
5	402	65.9	402	4	AAZ55549	Aaz55549 Canine in
6	401.8	65.9	405	4	AAF74300	Aaf74300 Canine in
7	380.6	62.4	816	10	ADG33104	Adg33104 Human DNA
8	379	62.1	816	3	AAA34857	Aaa34857 Human ade
9	379	62.1	816	3	AAA13338	Aaa13338 Human int
10	379	62.1	816	3	AAF20979	Aaf20979 Human low
11	379	62.1	816	10	ABZ96673	Abz96673 Human nuc
12	379	62.1	816	13	ACF63368	Acf63368 Human int
13	379	62.1	816	13	ADP56009	Adp56009 Human PRO
14	379	62.1	816	3	AAA34858	Aaa34858 Human ade
15	379	62.1	816	3	AAF20980	Aaf20980 Human low
16	379	62.1	4057	10	ABZ96674	Abz96674 Human nuc
17	379	62.1	4057	11	ABD20523	Abd20523 Human pul
18	379	62.1	4057	11	ABD20522	Abd20522 Human pul
19	377.4	61.9	816	11	ADI31910	Adi31910 Human cDN
20	364.4	59.7	520	2	AAT50755	Aat50755 Ovine IL-
21	345	56.6	345	3	AAZ55550	Aaz55550 Canine ma
22	345	56.6	345	3	AAZ55551	Aaz55551 Canine ma
23	314.2	51.5	399	2	AAT50756	Aat50756 Ovine IL-
24	293.8	48.2	393	4	AAF74306	Aaf74306 Canine in
25	276.6	45.3	858	9	AAL61293	Aal61293 hIL5-P2-P
26	275.6	45.2	402	9	AAN81380	Aan81380 A human B
27	275.6	45.2	858	9	AAL61294	Aal61294 hIL5-P30-
28	252	41.3	252	4	AAF74305	Aaf74305 Canine in
29	249.4	40.9	385	3	AAL61296	Aal61296 hIL5.37 v
30	232.4	38.1	864	9	AAA43842	Aaa43842 Human sec
31	232	38.0	370	1	AAN91647	Aan91647 Synthetic
32	231.4	37.9	864	9	AAL61295	Aal61295 hIL5.36 v
33	221	36.2	1945	10	ADB53890	Adb53890 Primary r
34	217.6	35.7	1533	1	AAN82431	Aan82431 B cell di
35	217.6	35.7	1534	2	AAT88013	Aat88013 Murine In
36	217.6	35.7	1623	2	AAT14925	Aat14925 T cell re
37	217.6	35.7	1623	2	AAV64062	Aav64062 Plasmid p
38	209.6	34.4	481	1	AAN80461	Aan80461 Clone 115
39	207.4	34.0	377	2	AAV01595	Aav01595 Human int
40	206.4	33.8	399	2	AAV64061	Aav64061 Human int
41	206.4	33.8	402	2	AAT14921	Aat14921 T cell re
42	196.4	32.2	348	2	AAT14922	Aat14922 T cell re
43	194.6	31.9	342	2	AAT14923	Aat14923 T cell re
44	194.2	31.8	339	2	AAT14924	Aat14924 T cell re
45	181.4	29.7	375	3	AAC68870	Aac68870 Modified

ALIGNMENTS

RESULT 1
AAZ55546
ID   AAZ55546 standard; cDNA; 610 BP.
XX
AC   AAZ55546;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
FH   Key   Location/Qualifiers
FT   CDS   29..433
FT   /*tag= a
FT   /product= "Canine IL-5"
XX
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999; 99WO-US011942.
XX
PR   29-MAY-1998; 98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wondering RS;
XX
PT   WPI; 2000-072623/06.
DR   P-PSDB; AAY58219.
XX
PS   Claim 1h; Page 223-224; 264pp; English.
XX
CC   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
CC   useful for treating or preventing e.g. tumors or autoimmune disease.
CC   Sequences AAZ55546-Z55551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Fit-3 ligand, canine or feline CD154 (CD40

CC　ligand), canine IL-5, feline interferon-alpha (IFN-alpha)
CC　and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC　nucleotides which encode these immunoregulatory proteins. The proteins,
CC　their associated nucleic acids, specific antibodies and inhibitors may be
CC　used as vaccines for therapeutic or prophylactic regulation of an immune
CC　response in animals (particularly cats, dogs, horses and humans). They
CC　may be used to treat autoimmune or infectious diseases including
CC　allergies, tumours, inflammation and graft rejection, and to increase the
CC　response from a co-administered antigen. The nucleotide sequences can
CC　also be used for the recombinant production of a protein, while
CC　nucleotide fragments are useful as probes, as amplification primers and
CC　as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC　The proteins may be used to raise antibodies and to screen for modulators
CC　of activity, while the antibodies may be used in detection, and in drug
CC　targeting.
XX
SQ　Sequence 610 BP; 202 A; 114 C; 139 G; 155 T; 0 U; 0 Other;

Query Match　　100.0%; Score 610; DB 3; Length 610;
Best Local Similarity　100.0%;
Matches　610; Conservative　0; Mismatches　0; Indels　0; Gaps　0;

Qy　　1 CAAGGCAAACACTGAACACATTTCAGAGCTATGAGAAATGCTTCTGAATTTGAGTTTGCTAGC 60
　　　　||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db　　1 CAAGGCAAACACTGAACACATTTCAGAGCTATGAGAAATGCTTCTGAATTTGAGTTTGCTAGC 60

Qy　 61 TCTTGGGGGCTGCCTATGTTTCTGCCTTTGCCTTTGCGTAGAAAAATCCCATGAATAGACTGGTGGC 120
　　　　||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db　 61 TCTTGGGGGCTGCCTATGTTTCTGCCTTTGCCTTTGCGTAGAAAAATCCCATGAATAGACTGGTGGC 120

Qy　121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGAACCTGAT 180
　　　　||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db　121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGAACCTGAT 180

Qy　181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 240
　　　　||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db　181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 240

Qy　241 AGACACATTGAAGAACCAAACTGCCCACGGGGAGGCTGTGGATAAAACTATTCCAAAACTT 300
　　　　||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db　241 AGACACATTGAAGAACCAAACTGCCCACGGGGAGGCTGTGGATAAAACTATTCCAAAACTT 300

Qy　301 GTCTTTAATAAAAAGAACCAATAGAGCCGCCAAAAAAAAAGGTGTTGCAGGAGGAAAAGATGGAG 360
　　　　||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db　301 GTCTTTAATAAAAAGAACCAATAGAGCCGCCAAAAAAAAAGGTGTTGCAGGAGGAAAAGATGGAG 360

Qy　361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGAC 420
　　　　||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db　361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGAC 420

Qy　421 ACCGGAAAGTTGAGGAACCAAAACCGGGGTTATTGTAGTGGGAGAGATTTTGGGAAGATGGGTTT 480
　　　　||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db　421 ACCGGAAAGTTGAGGAACCAAAACCGGGGTTATTGTAGTGGGAGAGATTTTGGGAAGATGGGTTT 480

Qy　481 TTTGGCGATGAGAATGAGGGCCACCAACAGTAGGGACTTAAATGGCCAGTATAACTAAGC 540
　　　　||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db　481 TTTGGCGATGAGAATGAGGGCCACCAACAGTAGGGACTTAAATGGCCAGTATAACTAAGC 540

Qy　541 TTCAGAGACAAAGTAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600
　　　　||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db　541 TTCAGAGACAAAGTAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600

Qy　601 TATATTTGAG 610
　　　　||||||||||
Db　601 TATATTTGAG 610

RESULT 2
ID　AA255547 standard; cDNA, 610 BP.
XX
AC　AA255547;
XX

DT　14-MAR-2000　(first entry)
XX
DE　Canine interleukin-5 (IL-5) cDNA complement.
XX
KW　Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW　immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS　Canis familiaris.
XX

Key	Location/Qualifiers
CDS	complement(178..582)
	/*tag= a
	/product= "Canine IL-5"

XX
PN　WO961618-A2.
XX
PD　02-DEC-1999.
XX
PF　28-MAY-1999;　99WO-US011942.
XX
PR　29-MAY-1998;　98US-0087306P.
XX
PA　(HESK-) HESKA CORP.
XX
PI　Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR　WPI; 2000-072623/06.
DR　P-PSDB; AAY58219.
XX
PT　Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT　useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS　Claim 1h; Page 224-225; 264pp; English.
XX
CC　Sequences AA255546-255551 represent cDNA sequences encoding canine
CC　interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC　feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC　ligand), canine IL-5, canine interferon-alpha (IFN-alpha)
CC　and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC　nucleotides which encode these immunoregulatory proteins. The proteins,
CC　their associated nucleic acids, specific antibodies and inhibitors may be
CC　used as vaccines for therapeutic or prophylactic regulation of an immune
CC　response in animals (particularly cats, dogs, horses and humans). They
CC　may be used to treat autoimmune or infectious diseases including
CC　allergies, tumours, inflammation and graft rejection, and to increase the
CC　response from a co-administered antigen. The nucleotide sequences can
CC　also be used for the recombinant production of a protein, while
CC　nucleotide fragments are useful as probes, as amplification primers and
CC　as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC　The proteins may be used to raise antibodies and to screen for modulators
CC　of activity, while the antibodies may be used in detection, and in drug
CC　targeting.
XX
SQ　Sequence 610 BP; 155 A; 139 C; 114 G; 202 T; 0 U; 0 Other;

Query Match　　100.0%; Score 610; DB 3; Length 610;
Best Local Similarity　100.0%;
Matches　610; Conservative　0; Mismatches　0; Indels　0; Gaps　0;

Qy　　1 CAAGGCAAACACTGAACACATTTCAGAGCTATGAGAAATGCTTCTGAATTTGAGTTTGCTAGC 60
　　　　||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db　610 CAAGGCAAACACTGAACACATTTCAGAGCTATGAGAAATGCTTCTGAATTTGAGTTTGCTAGC 551

Qy　 61 TCTTGGGGGCTGCCTATGTTTCTGCCTTTGCCTTTGCGTAGAAAAATCCCATGAATAGACTGGTGGC 120
　　　　||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db　550 TCTTGGGGGCTGCCTATGTTTCTGCCTTTGCCTTTGCGTAGAAAAATCCCATGAATAGACTGGTGGC 491

Qy　121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGAACCTGAT 180
　　　　||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db　490 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGAACCTGAT 431

Qy　181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 240
　　　　||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db　430 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTAT 240

```
Db   430  GATTCCTACTCCTGAAATAAAAACACAACTGTGTCATTAAAGAAGAGTTTTCAGGGTAT  371
Qy   241  AGACACATTGAAGAACCAAACTGCCCACGGGGGGAGGCGTGGGATAAACTATTCCAAAACTT  300
          ||||||||
Db   370  AGACACATTGAAGAACCAAACTGCCCACGGGGGGAGGCGGTGGGATAAACTATTCCAAAACTT  311
Qy   301  GTCTTTAATAAAAGAACACATAGAACCGCCAAAAAAAAGGTGTCGCAGGAGAAAGATGGAG  360
          ||||||||     ||||||||||||||||||||||||||||||
Db   310  GTCTTTAATAAAAGAACACATAGAGGCGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAG  251
Qy   361  AGTGACAAAGTTCCTAGACTACCTGCCAAGGTATTCTTGGGTGTAATAAACACCGAGTGGAC  420
          ||||||||
Db   250  AGTGACAAAGTTCCTAGACTACCTGCCAAGGTATTCTTGGGTGTAATAAACACCGAGTGGAC  191
Qy   421  ACCGGAAAGTTGAGGAACAAAACGGGCTTATTGTAGTGGAAGATTTGGAGGAAGAATGGTTT  480
          ||||||||
Db   190  ACCGGAAAGTTGAGGAACAAAACGGGCTTATTGTAGTGGAAGATTTGGAGGAAGAATGGTTT  131
Qy   481  TTTGGCGATGAGAATGAGGGGCCCACCAAACAGTAGGGGACTTAATGGCCAGTATAACTAAGC  540
          ||||||||
Db   130  TTTGGCGATGAGAATGAGGGGCCCACCAAACAGTAGGGGACTTAATGGCCAGTATAACTAAGC  71
Qy   541  TTCAGAGACAAAGTAAATATTTCACTTCACTTCACACAGATGAAA  600
          ||||||||
Db   70   TTCAGAGACAAAGTAAATATTTCACTTCACTTCACACAGATGAAA  11
Qy   601  TATATTTGAG  610
          ||||||||
Db   10   TATATTTGAG  1
```

RESULT 3
AA244265
```
ID   AA244265 standard; DNA; 838 BP.
XX
AC   AA244265;
XX
DT   31-MAR-2000   (first entry)
XX
DE   Porcine IL-5 DNA.
XX
KW   Pig; vaccine; cysticercosis; protective antigen; cC1; cC3; cC4;
KW   tenial cysticercus; gamma interferon; IFN-gamma; interleukin 5; IL-5; ss.
XX
OS   Sus scrofa.
XX
PN   CN1231339-A.
XX
PD   13-OCT-1999.
XX
PF   29-JAN-1999;   99CN-0011347.
PR   29-JAN-1999;   99CN-00113447.
XX
PA   (UYTW-) UNIV NO 2 MILITARY MEDICAL PLA.
XX
PI   Sun S, Dai J;
DR   WPI; 2000-087904/08.
XX
PT   Nucleic acid vaccine for cysticercosis co-contracted by human and pig.
PS   Claim 3; Page 9; 21pp; Chinese.
XX
CC   This invention describes a novel nucleic acid vaccine for preventing and
CC   curing human and pork cysticercosis. The invention involves the formation
CC   of a eukaryotic expression plasmid from fusion transcript expression unit
CC   consisting of three protective antigen genes (cC1, cC3 and cC4) of pig
CC   tenial cysticercus and coexpression unit of related cell factor gamma
CC   interferon (IFN-gamma) and pork interleukin 5 (IL-5)) genes. The
CC   production and purification process of said nucleic acid vaccine is
CC   simple and convenient, the physical and chemical properties of the
CC   vaccine are stable, and the vaccine is easy to store and transport, and
```

```
CC   vaccine possesses effective immunological protective function for human and pig
CC   cysticercosis. This sequence represents the pig IL-5 gene used in the
CC   method of the invention
XX
SQ   Sequence 838 BP; 280 A; 148 C; 171 G; 239 T; 0 U; 0 Other;

Query Match       66.5%;   Score 405.8;   DB 3;   Length 838;
Best Local Similarity   84.8%;   Pred. No. 3.1e-110;
Matches 498;   Conservative   0;   Mismatches   67;   Indels   22;   Gaps   3;

Qy    1   CAAGGCAAACACTGAACAATTCAGAGCGTAATGAGAATCGTTCTGAATTTGAGTTTGCTAGC   60
          ||||||||                         |||||||||||||
Db    17  CAAAGCAAACACTGACGAATTTGAGACCCATATGAGAAATGCTTCTCGCATTTGAAGTTTGCTAGC   76
Qy    61  TCTTGGGGCCTGCCTATGTTCTTGCCTTTGCTGTAGAAAATCCCATAGAAATAGACTGGTGGC  120
          ||||||||
Db    77  TCTTGGGGCCTGGCTCGGCTCATGTTTCTCCCACTCCATTGCTGCTACAAAGTCCCATGAATAGGC  136
Qy    121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGCCTGATAGGCCGATGGGAACCTGAT  180
          ||||||||
Db    137 AGAGACCTTGGCCACTGCTCTCCACTCATCGAACTCTACGATAGGCGGACGGGAACCTGAT  196
Qy    181 GATTCCTACTCCTGAAATAAAAATCACCAACTGTGCATTGCTTGAAGAAGTCTTTCAGGGTAT  240
          ||||||||
Db    197 GATTCCTACTCCTGAACATAACAAATCAACAACTGTGCATTGCATTAAAGAAGTCTTTCAGGGTAT  256
Qy    241 AGACACATTGAAGAACCAAACTGCCCACGGGGGGAGGCTGTGGGATAAACTATTCCAAAACTT  300
          ||||||||
Db    257 AGACACATTAAAGAATGGCACTGTGCGGGGGAATGCGTGTGGGAAAAGCTTTTCCGAAACTT  316
Qy    301 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAAAGGGTGTGCAGGAGAAAGATGGAG  360
          ||||||||
Db    317 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAAAGGGTGTGGAGGAAAGAATGGAG  376
Qy    361 ACCGGAAAGTTGAGGAACAAAACCGGCTTATTGTGAGTGGAAGATTTCTTGGTGTGTTAATAATAAACACCGAGTGGAC  420
          ||||||||
Db    377 AGTAAAGAAAGTTCCTAGACTACCTGCCAAGGTGTTAATAAAACACTGAGTGGAC  436
Qy    421 ACCGGAAAGTTGAGGAACACAACCGGCTTATTGTTAGTGGAAGATTTGGAGGAAGAGAA------  474
          ||||||||
Db    437 AATGGAAAGTTGAGGAATGAAACTGGGTTATTGCAGTGATAGAGTTCTGTAGGGAGAAGAGA  496
Qy    475 -TGGTTTTTTTGGCGATGAGAATGAGGGGCCCACCAAACAGTAGGGGCCACAGTATA  533
          ||||||||
Db    497 TGTTATTTTTTTGCAATGAGAATGAGGGCCCCAACC----------AAGGGTCAGTGTA  542
Qy    534 ACTAAGCTTCAGAGACAAAGTAAATATTTCAGGCATCCTACTACTTT  580
          ||||||||
Db    543 ATTAAACTTCAGATGCAAAG-CAAATTTTTCAGGCATACTGCTACTTT  588
```

RESULT 4
AA255548
```
ID   AA255548 standard; cDNA; 402 BP.
XX
AC   AA255548;
XX
DT   14-MAR-2000   (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA coding region.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
PN   WO996161B-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999;   99WO-US011942.
PR   29-MAY-1998;   98US-0087306P.
```

Left column

```
XX
PA  (HESK-) HESKA CORP.
XX
PI  Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR  WPI; 2000-072623/06.
DR  P-PSDB; AAY58219.
XX
PT  Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT  useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS  Claim 1h; Page 225; 264pp; English.
XX
CC  Sequences AA255546-255551 represent cDNA sequences encoding canine
CC  interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC  feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC  ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC  and feline granulocyte macrophage colony-stimulating factor (GMCSF); and
CC  nucleotides which encode these immunoregulatory proteins. The proteins,
CC  their associated nucleic acids, specific antibodies and inhibitors may be
CC  used as vaccines for therapeutic or prophylactic regulation of an immune
CC  response in animals (particularly cats, dogs, horses and humans). They
CC  may be used to treat autoimmune or infectious diseases including
CC  allergies, tumours, inflammation and graft rejection, and to increase the
CC  response from a co-administered antigen. The nucleotide sequences can
CC  also be used for the recombinant production of a protein, while
CC  nucleotide fragments are useful as probes, as amplification primers and
CC  as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC  The proteins may be used to raise antibodies and to screen for modulators
CC  of activity, while the antibodies may be used in detection, and in drug
CC  targeting
XX
SQ  Sequence 402 BP; 129 A; 79 C; 93 G; 101 T; 0 U; 0 Other;

Query Match             65.9%;  Score 402;  DB 3;  Length 402;
Best Local Similarity  100.0%;  Pred. No. 3.1e-109;
Matches    402;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGTTGCCTTT 88
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGTTGCCTTT 60

Qy         89 GCTGTPAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 148
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 GCTGTPAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy        149 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 208
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180

Qy        209 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 268
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240

Qy        269 GGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAGAACACATAGAGCGC 328
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 GGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAGAACACATAGAGCGC 300

Qy        329 CAAAAAAAAAGGTGTGCAGGAAGCATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 CAAAAAAAAAGGTGTGCAGGAAGCATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Qy        389 GTATTTCTTGGTGTAATAAAACACCCAGTGGACACCCGGAAAGT 430
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 GTATTTCTTGGTGTAATAAAACACCCAGTGGACACCCGGAAAGT 402
```

Right column

```
DT  14-MAR-2000 (first entry)
XX
DE  Canine interleukin-5 (IL-5) cDNA coding region complement.
XX
KW  Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW  immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS  Canis familiaris.
XX
PN  WO9961618-A2.
XX
PD  02-DEC-1999.
XX
PF  28-MAY-1999; 99WO-US011942.
XX
PR  29-MAY-1998; 98US-0087306P.
XX
PA  (HESK-) HESKA CORP.
XX
PI  Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR  WPI; 2000-072623/06.
DR  P-PSDB; AAY58219.
XX
PT  Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT  useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS  Claim 1h; Page 226; 264pp; English.
XX
CC  Sequences AA255546-255551 represent cDNA sequences encoding canine
CC  interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC  feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC  ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC  and feline granulocyte macrophage colony-stimulating factor (GMCSF); and
CC  nucleotides which encode these immunoregulatory proteins. The proteins,
CC  their associated nucleic acids, specific antibodies and inhibitors may be
CC  used as vaccines for therapeutic or prophylactic regulation of an immune
CC  response in animals (particularly cats, dogs, horses and humans). They
CC  may be used to treat autoimmune or infectious diseases including
CC  allergies, tumours, inflammation and graft rejection, and to increase the
CC  response from a co-administered antigen. The nucleotide sequences can
CC  also be used for the recombinant production of a protein, while
CC  nucleotide fragments are useful as probes, as amplification primers and
CC  as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC  The proteins may be used to raise antibodies and to screen for modulators
CC  of activity, while the antibodies may be used in detection, and in drug
CC  targeting
XX
SQ  Sequence 402 BP; 101 A; 93 C; 79 G; 129 T; 0 U; 0 Other;
XX

Query Match             65.9%;  Score 402;  DB 3;  Length 402;
Best Local Similarity  100.0%;  Pred. No. 3.1e-109;
Matches    402;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGTTGCCTTT 88
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db        402 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGTTGCCTTT 343

Qy         89 GCTGTPAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 148
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db        342 GCTGTPAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 283

Qy        149 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 208
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db        282 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 223

Qy        209 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 268
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db        222 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 163

Qy        269 GGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAGAACACATAGAGCGC 328
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db        162 GGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAGAACACATAGAGCGC 103
```

Bottom

```
RESULT 5
AA255549/c
ID   AA255549 standard; cDNA; 402 BP.
XX
AC   AA255549;
XX
```

```
Qy   329 CAAAAAAAAAAGGTGTGCAGGAGGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   102 CAAAAAAAAAAGGTGTGCAGGAGGAAAGATGACAAAGTTCCTAGACTACCTGCAA 43
Qy   389 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCCGGAAAGT 430
         |||||||||||||||||||||||||||||||
Db    42 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCCGGAAAGT 1

RESULT 6
AAF74300
ID   AAF74300 standard; DNA; 405 BP.
XX
AC   AAF74300;
XX
DT   04-MAY-2001 (first entry)
XX
DE   Canine interleukin-5 coding sequence #1.
XX
KW   Dog; interleukin-5; Il-5; allergy; cancer; gene therapy;
KW   inflammatory reaction; ds.
XX
OS   Canis sp.
XX
PN   WO20011049-A2.
XX
PD   15-FEB-2001.
XX
PF   09-AUG-2000; 2000WO-US021651.
XX
PR   10-AUG-1999;   99US-0037161.
XX
PA   (IDEX-) IDEXX LAB INC.
XX
PI   Guo H, Lawton R, Mermer B, Aiyappa AP;
XX
DR   WPI; 2001-191542/19.
DR   P-PSDB; AAB72615.
XX
PT   Novel canine interleukin 5 polynucleotide and polypeptides are used for
PT   generating antibodies which are useful in treating allergies in dogs.
XX
PS   Claim 31; Page 46; 48pp; English.
XX
CC   The present invention provides the protein and coding sequences of the
CC   canine interleukin-5 (IL-5) protein. This can be used to treat allergies,
CC   cancer and inflammatory reactions in dogs. The present sequence is one
CC   version of the IL-5 coding sequence shown in the specification
XX
SQ   Sequence 405 BP; 131 A; 77 C; 94 G; 103 T; 0 U; 0 Other;

Query Match             65.9%;    Score 401.8; DB 4;    Length 405;
Best Local Similarity   99.5%;    Pred. No. 3.6e-109;
Matches  403; Conservative    0; Mismatches    2;  Indels   0;  Gaps   0;

Qy    29 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTTGCCTTT 88
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     1 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTTGCCTTT 60
Qy    89 GCTGTGAAAATCCCATGAATAGACTGGTGCCAGAGACCTTGACACTGCTCCACTCAT 148
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    61 GCTGTGAAAATCCCATGAATAGACTGGTGCCAGAGACCTTGACACTGCTCCACTCAT 120
Qy   149 CGAACTTGGCTGATAGGCGATGGGAACCTGAGGAATCCTACTCCTGAAAATAAAAATCAC 208
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CGAACTTGGCTGATAGGCGATGGGAACCTGAGGAATCCTACTCCTGAAAATAAAAATCAC 180
Qy   209 CAACTGTGCATTAAAGAAGAAGTTTTTCAGGTATAGAGACACATTGAAGAACCAAAACTGCCAC 268
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CAACTGTGCATTAAAGAAGAAGTTTTTCAGGTATAGAGACACATTGAAGAACCAAAACTGCCAC 240
Qy   269 GGGGAGGCCTGTGGATAAAACTATTCCAAAACTTGCTTTAATAAAGAACACATAGAGCGC 328
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
```

```
Db   241 GGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAGAACACATAGAGCGC 300
         |||||||||||||||||||||||||||||||||||| ||||||||||||||||||||||
Qy   329 CAAAAAAAAAGGTGTGCAGGAGGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388
         ||||||||||||||||||||||||||||||       |||||||||||||||||||||
Db   301 CAAAAAAAAAGGTGTGCAGGAGGAAAGATGACAAAGTTCCTAGACTACCTGCAA 360
Qy   389 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCCGGAAAGTTGA 433
         ||||||||||||||||||||||||||||||||||        ||||||||
Db   361 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACAAATGGAAAGTTGA 405

RESULT 7
ADG33104
ID   ADG33104 standard; DNA; 816 BP.
XX
AC   ADG33104;
XX
DT   26-FEB-2004 (first entry)
XX
DE   Human DNA differentially expressed in patients with SLE SeqID428.
XX
KW   human; ds; autoimmune; chronic inflammatory disease; SLE;
KW   systemic lupus erythematosus; rheumatoid arthritis; cholecystitis;
KW   Sjogren's disease; CREST syndrome; scleroderma; ankylosing spondylitis;
KW   ulcerative colitis; primary sclerosing cholangitis; appendicitis;
KW   diverticulitis; primary biliary sclerosis.
XX
OS   Homo sapiens.
XX
PN   WO200309094-A2.
XX
PD   06-NOV-2003.
XX
PF   24-APR-2003; 2003WO-US013015.
XX
PR   24-APR-2002; 2002US-00131827.
XX
PA   (EXPR-) EXPRESSION DIAGNOSTICS INC.
XX
PI   Wohlgemuth J, Fry K, Woodward R, Ly N;
XX
DR   WPI; 2003-877243/81.
XX
PT   Diagnosing or monitoring autoimmune and chronic inflammatory diseases,
PT   such as rheumatoid arthritis, systemic lupus erythematosus, ulcerative
PT   colitis, psoriasis and asthma by detecting the expression level of one or
PT   more genes.
XX
PS   Claim 18; SEQ ID NO 428; 877pp; English.
XX
CC   This invention relates to novel methods for diagnosing and monitoring
CC   autoimmune and chronic inflammatory diseases. Specifically, it refers to
CC   the identification of genes that have a clinical utility as diagnostic
CC   tools for the management of, in particular, patients with systemic lupus
CC   erythematosis (SLE) or rheumatoid arthritis (RA). Accordingly, the
CC   present invention describes a method for determining the levels of
CC   multiple differentially expressed genes of a patient, in a concerted
CC   manner, in order to achieve an improved diagnostic assay with sensitivity
CC   and specificity for the disease in question. As such, these genes are
CC   useful for the diagnosis of various other inflammatory disorders
CC   including cholecystitis, Sjogren's disease, CREST syndrome, scleroderma,
CC   ankylosing spondylitis, ulcerative colitis, primary sclerosing
CC   cholangitis, appendicitis, diverticulitis, and primary biliary sclerosis.
CC   This polynucleotide is a DNA sequence representing human mRNA that is
CC   differentially expressed in patients with SLE, used in an exemplification
CC   of the invention.
XX
SQ   Sequence 816 BP; 276 A; 137 C; 165 G; 238 T; 0 U; 0 Other;

Query Match             62.4%;    Score 380.6; DB 10;   Length 816;
Best Local Similarity   79.3%;    Pred. No. 9.8e-103;
Matches  464; Conservative    0; Mismatches  119;  Indels   2;  Gaps   1;
```

```
RESULT 8
ID   AAA34857 standard; DNA; 816 BP.
XX
AC   AAA34857;
XX
DT   28-JUL-2000  (first entry)
XX
DE   Human adenosine receptor related polynucleotide SEQ ID NO:2546.
XX
KW   Human; adenosine receptor; low adenosine antisense oligonucleotide;
KW   phosphorothioate; impaired respiration; inflammation; allergy;
KW   allergic disease; bronchoconstriction; inhibitor; antiinflammatory;
KW   antiallergic; antiasthmatic; cytostatic; analgesic; impaired airway;
KW   lung disease; ischaemic condition; pulmonary vasoconstriction; asthma;
KW   respiratory distress syndrome; pain; cyatic fibrosis; emphysema;
KW   pulmonary hypertension; chronic obstructive pulmonary disease; COPD;
KW   cancer; leukaemia; lymphoma; carcinoma; metastasis; ss.
OS   Homo sapiens.
XX
PN   WO20009525-A2.
XX
PD   24-FEB-2000.
XX
PF   03-AUG-1999;  99WO-US017712.
XX
PR   03-AUG-1998;  98US-0095212P.
XX
PA   (UYEC-) UNIV EAST CAROLINA.
XX
PI   Nyce JW;
XX
DR   WPI; 2000-205971/18.
XX
PT   New antisense oligonucleotides useful for treating e.g. pulmonary
PT   vasoconstriction, inflammation, allergies, asthma, hypertension,
PT   bronchitis, emphysema, respiratory distress syndrome, ischemia or
PT   cancers.
XX
PS   Disclosure; Page 716; 1343pp; English.
XX
CC   The present invention describes a new composition comprising an antisense
CC   oligonucleotide (ON) with low adenosine (up to 15%), which targets
CC   nucleic acids involved in bronchoconstriction, allergies, and/or
CC   inflammation. The ON can have antiinflammatory, antiallergic,
CC   antiasthmatic, cytostatic and analgesic activities. The compositions are
CC   useful for the treatment of diseases associated with inflammation,
CC   impaired airways, including lung disease and diseases whose secondary
CC   effects afflict the lungs of a subject. They can be used for treating
CC   e.g. ischaemic conditions, pulmonary vasoconstriction, allergies, asthma,
CC   impeded respiration, respiratory distress syndrome, pain, cystic
CC   fibrosis, pulmonary hypertension, emphysema, chronic obstructive
CC   pulmonary disease (COPD), and cancers such as leukaemias, lymphomas,
CC   carcinomas, and cancers which may metastasise to the lungs, including
CC   breast and prostate cancer. The reduction of the adenosine content of the
CC   ONs reduces side effects. The A-containing ONs break down with the
CC   release of deoxyadenosine which activates adenosine receptors causing
CC   bronchoconstriction and inflammation. AAA32313 to AAA35312 represent the
CC   nucleotide sequences given in the sequence listing from the present
CC   invention, which correspond to SEQ ID NO:1 to 2815, and then the last 185
CC   sequences are also called SEQ ID NO:1 to 185, but the sequences differ
CC   from the previously named sequences. SEQ ID NO:11 to 1680 (AAA3233 to
CC   AAA33992) are specifically claimed ONs from the present invention. N.B.
CC   Sequences given in the disclosure of the present invention do not match
CC   up with their corresponding SEQ ID NO: sequences given in the sequence
CC   listing.
XX
SQ   Sequence 816 BP; 277 A; 137 C; 164 G; 238 T; 0 U; 0 Other;

Query Match             62.1%;  Score 379;  DB 3;  Length 816;
Best Local Similarity   79.1%;
Matches  463;  Conservative    0;  Mismatches  120;  Indels   2;  Gaps   1;

Qy         2 AAGGCAAACACTGAACATTTCAGAGCTATGAGAAGTCCTTCTGAATTTGAGTTTGCTAGCT 61
             ||||||||| | | ||| |||||||| |||| ||  | ||||| ||||||||||||||||||
Db        18 AAGGCAAACGCAGAAGGTTTCAGAGCGCCATGAGGAATGCTTCTGCATTTGAGTTTGCTAGCT 77

Qy        62 CTTGGGGGCTCCCTATGTTTCTGCCCTTTGCTGTAGGAAAATCCCATGAAATAGACTGGTGGCA 121
             |||||  | |||| ||||  | |||   |||  |||| | ||||| || |||||||||||||
Db        78 CTTGGAGCTGCCTACGTGTATGCCAATCCCACAGAAATTCCCACAAGTGCATTGGTGAAA 137

Qy       122 GAGACCTTGACACTGCTCTCCACTCATCGATCGAATTGGCGTATGAGGCCGATGGGAACCTGATG 181
             |||||||||   |||||| | |||||||||| |||| ||||||| ||| | |||||||||||||
Db       138 GAGACCTTGGCCACTGCTTTCTTACTCATCGATAGCCATGAGACTCGAGG 197

Qy       182 ATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATA 241
             ||||||| | ||||||| |||| |||||||||||||| ||||||||||||||||| | |||
Db       198 ATTCCTGTTCGTACATAAAAATCACCAACTGTGCCACTGAAGAAATCTTTCAGGGAATA 257

Qy       242 GACACATTGAAGAACCAAAACTGTCCACGGGGAGGCGTGTGGATAAAACTATTCCAAAACTTG 301
             |||||||||||| | |||||||||| | |||||| || || |||||||| | |||||||||||
Db       258 GGCACACTGGAGAGTCAAACTGTCGTAAGGGGGTACTGTGGAAAGACTATTCAAAAACTTG 317

Qy       302 TCTTTAATAAAAAGAACACATAGAGCGCCCAAAAAAGGGGGTGTGCAGGAGAAAGAGATGGAGA 361
             ||||| |||| |||| | || |||||||||||||||||||||| | |||||||||| |||||||
Db       318 TCCTTAATAAAGAATACATTGACGGCCCAAAAAAAAAGTGTGGAAAGACTGGAAAGACGGAGA 377

Qy       362 GTGACAAAGTTCCTAGACTACCTGCAAGTATTCTTGGTGTGTAATAAACACCGAGTGGACA 421
             ||||||||||||| || || ||| |||| |||| | || ||||||||||| ||||||||| 
Db       378 GTAAACCAATTCCTAGACTACCTGCAAGAGTTTCTTGGTGTAATGAACACCGAGTGGATA 437

Qy       422 CCGGAAAAGTTGAGAACAAAACCGGCTTATTGTGAAGGATTTTGGAGAAGAATG--GTT 479
             ||||| | | || || |||||| ||| |||||  | || ||||||| | ||||   |||
Db       438 ATAGAAAGTTGAGACTAAACTGGTTTGTTGTTGCAGCCAAAGATTTTGGAGGAGAGGACATT 497

Qy       480 TTTTGGCGATGAGAATGAGGGGCCCAACCAACAGTAGGGACTTAATGGCCAGTATAACTAAG 539
             |||||| |||  || ||  ||| | |||| || |||  ||| || | || | || |||||||
Db       498 TTACTGCAGTGAGAATGAGGGGCCCAAGAAGAGTAGTG-TTAATTTCAGTATAATTTAA 557

Qy       540 CTTCAGAGACAAAGTAAATATTTCAGGCATCCTACTACTTTTATCA 584
             |||||| || |||| |||| ||||||||  | | ||| | ||| ||
Db       558 CTTCAGAGGGGAAAGTAAATATTTCAGGCATACTGACACTTTGCCA 602
```

```
Db  438 ATAGAAAAGTTGAGACTAAACTGGTTGTTGCGAGCCAAAAGATTTGGAGGAGAAGGACATT 497
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Qy  480 TTTTGGCGATGAGAATGAGGGGCCAACCAACAGTAGGGACTTAATGCCCAGTATAACTAAG 539
Db  498 TTACTGCAGTGAGAATGAGGGGCCAAGAAAAGAGTCAGGCCCTTAATTTGATATAATTTAA 557
Qy  540 CTTCAGAGACAAAAGTAAATATTTCAGGCATCCTACTACTTTATCA 584
        ||||||||| |||||||||||||||||||||| || ||||| |||
Db  558 CTTCAGAGGGAAAAGTAAATATTTCAGGCATACTGACACTTTGCCA 602
```

RESULT 9
AAA13338
ID   AAA13338 standard; cDNA; 816 BP.
XX
AC   AAA13338;
XX
DT   25-JUL-2000 (first entry)
XX
DE   Human interleukin-5 (IL-5) nucleotide sequence.
XX
KW   Human; interleukin-5; IL-5; inflammatory disease; asthma; eczema;
KW   antisense oligonucleotide; allergic rhinitis; inflammatory skin disease;
KW   allergic conjunctivitis; inhibitor; ss.
XX
OS   Homo sapiens.
XX
PN   US6048726-A.
XX
PD   11-APR-2000.
XX
PF   15-MAY-1998; 98US-0007983 9.
PR   15-MAY-1998; 98US-0007983 9.
XX
PA   (WELT/) WELTMAN J K.
PA   (KARI/) KARIM A S.
XX
PI   Weltman JK, Karim AS;
XX
DR   WPI; 2000-302784/26.
XX
PS   Disclosure; Col 3-4; 11pp; English.
XX
PT   Oligonucleotide comprising non-natural internucleoside linkage, useful
PT   for inhibiting interleukin-5 expression and treating inflammatory
PT   diseases, asthma, allergic rhinitis, allergic conjunctivitis.
XX
CC   This sequence represents the human interleukin-5 (IL-5) encoding
CC   nucleotide sequence. Interleukin-5 is involved in eosinophilic
CC   inflammation and inflammatory disorders. The present invention relates to
CC   an IL-5 antisense oligonucleotide (see AAA13337) which inhibits the
CC   expression of IL-5. The antisense oligonucleotide has at least one non-
CC   natural internucleoside linkage. The oligonucleotide is able to inhibit
CC   IL-5 secretion in a dose dependent manner, and is useful for inhibiting
CC   IL-5 expression and therefore treating inflammatory diseases, asthma,
CC   allergic rhinitis, allergic conjunctivitis and inflammatory skin diseases
CC   such as eczema
XX
SQ   Sequence 816 BP; 277 A; 137 C; 164 G; 238 T; 0 U; 0 Other;

Query Match   62.1%; Score 379; DB 3; Length 816;
Best Local Similarity   79.1%; Pred. No. 2.9e-102;
Matches   463; Conservative   0; Mismatches 120; Indels   2; Gaps   1;

Qy   2 AAGGCAAACACTGAACATTTCAGAGAGCTATGAAGATGCTTCTTCTGAATTTGAGTTTGCTTAGCT 61
        ||||||||| ||||| |||||||||| ||||| |||||||||||||| |||||||||||||| |||
Db   18 AAGGCAAAACGAGAAACGTTTCAGAGGCCATGAGGATGCTTCTTCTGCCATTTGAGTTTGCTAGCT 77

Qy   62 CTTGGGGGCTGCCTATGTTTCTCGCCTTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCA 121
        ||||| ||||||||| |||| |||||| |||| || ||||| |||||| || | ||||| ||
Db   78 CTTGGAGCTGCCTTACGTGTATCGCCATCCCACAGAAAATTCCCACAACGTGCAATGGGTGAAA 137
```

RESULT 10
AAF20979
ID   AAF20979 standard; DNA; 816 BP.
XX
AC   AAF20979;
XX
DT   14-MAR-2001 (first entry)
XX
DE   Human low adenosine antisense oligonucleotide related sequence #2546.
XX
KW   Low adenosine antisense oligonucleotide; phosphorothioate; allergy;
KW   human; airway disorder; bronchoconstriction; lung inflammation;
KW   surfactant depletion; respiratory; bronchodilator; antiinflammatory;
KW   immunosuppressive; antiasthmatic; analgesic; hypotensive; cytostatic;
KW   respiratory obstruction; pulmonary obstruction; impeded respiration;
KW   surfactant hypoproduction; pulmonary vasoconstriction; asthma; RDS;
KW   respiratory distress syndrome; pain; cystic fibrosis; allergic rhinitis;
KW   pulmonary hypertension; emphysema; pulmonary transplantation rejection;
KW   chronic obstructive pulmonary disease; pulmonary infection; bronchitis;
KW   cancer; ss.
XX
OS   Homo sapiens.
XX
PN   WO200062736-A2.
XX
PD   26-OCT-2000.
XX
PF   24-MAR-2000; 2000WO-US008020.
PR   06-APR-1999; 99US-0127958P.
XX
PA   (UYEC-) UNIV EAST CAROLINA.
PA   (NYCE/) NYCE J W.
XX
PI   Nyce JW;
XX
DR   WPI; 2000-679539/66.
XX
PT   Low adenosine (A) content antisense oligonucleotides which do not trigger
PT   adenosine receptors during metabolism, useful e.g. for treating cancers

```
Qy  122 GAGACTTGACACTGCTCTCCACTCATCATCGAGACTTGGCTGTGATAGGCGGACGACCTGATG 181
Db  138 GAGACCCTTGGCACTGCTTTCTTCTACTCATCGAACTCTGCTGATAGCCAATGAGACTCTGAGG 197
Qy  182 ATTCCTPACTCCTGAAATATAAAATCACCACCACTGGTGCATTATAAAGAGAGTTTTTCAGGGTA 241
Db  198 ATTCCTGTTCCTGTTGTACATTAAAAATCACCAAACTGTGCACTGAAGAAACTCTTTCAGGGATA 257
Qy  242 GACACATTGAAGAAACCAAAACTCCCCACGGGGAGGAGGGAGGCTGGGATAAACTATTCCAAACTTG 301
Db  258 GGCACACTGGGAGGTCAAACTGTTGCCGAAGGGGGTACTGTGGGAAAGACTATTCAAAAACTTG 317
Qy  302 TCTTTAATAAAGAAACACATAGAGCGCCCAAAAAAAAAAAAGGTTGTCGAGGAGAAGATGGAA 361
Db  318 TCCTTAATAAAGAAAATACATTGACGGCGCCAAAAAAAAGTGTCGAGAGAAGAGACGGAGA 377
Qy  362 GTGACAAAAGTTCCTAGACTACCTGCCGAAGTAGTTTTCTTGGTGTGGTAATAAACACCCAGTGGACA 421
Db  378 GTAAACAAATCCTAGACTACCTGCGAAGAGTTTCTTGGTGTAAATGAACACCCAGTGGATA 437
Qy  422 CCGGAAAGTTGAGAACAAAACCGGCTTATTGTAGTGGGAAGAGATTTTGGGAAGAGATG--GTT 479
Db  438 ATAGAAAAGTTGAGACTAAACTGGTTGTTGCGAGCCAAAAGATTTGGGAGGAGAAGGACATT 497
Qy  480 TTTTGGCGATGAGAATGAGGGGCCAACCAACAGTAGGGACTTAATGCCCAGTATAACTAAG 539
Db  498 TTACTGCAGTGAGAATGAGGGGCCAAGAAAAGAGTCAGGCCCTTAATTTGATATAATTTAA 557
Qy  540 CTTCAGAGACAAAAGTAAATATTTCAGGCATCCTACTACTTTATCA 584
Db  558 CTTCAGAGGGAAAAGTAAATATTTCAGGCATACTGACACTTTGCCA 602
```

PT   and respiratory obstructions.
XX
PS   Disclosure; Page 788; 1592pp; English.
XX
CC   The present invention describes low adenosine (A) content antisense
CC   oligonucleotides and compositions (I) comprising them. In the antisense
CC   oligonucleotides the A is replaced by a 'Universal' or alternative base.
CC   (I) can have respiratory, bronchodilator, antiinflammatory, analgesic,
CC   immunosuppressive, antiasthmatic, hypotensive and cytostatic activities.
CC   The antisense oligonucleotides and (I) can be used to down-regulate the
CC   expression and or activity of target polypeptides associated with
CC   lung/respiratory disorders and malignancies, such as stimulating and
CC   activating peptide factors and transmitters, transcription factors,
CC   immunoglobulins and antibodies, antibody receptor, cytokines and
CC   chemokines, endogenously produced specific and non-specific enzymes,
CC   binding proteins, adhesion molecules and their receptors, cytokine and
CC   chemokine receptors, adenosine receptors, bradykinin receptors, central
CC   nervous system (CNS) and peripheral nervous and non-nervous system
CC   receptors, CNS and peripheral nervous and non-nervous system peptide
CC   transmitters, defensins, growth factors, vasoactive peptides and
CC   receptors, binding proteins and malignancy associated proteins. The
CC   antisense oligonucleotides may be used in this way to treat disorders
CC   including respiratory obstruction (especially pulmonary obstruction
CC   and/or bronchoconstriction) and/or lung inflammation, allergy(ies) and/or
CC   condition selected from pulmonary vasoconstriction, inflammation,
CC   allergies, asthma, impeded respiration, respiratory distress syndrome
CC   (RDS), pain, cystic fibrosis (CF), allergic rhinitis (AR), pulmonary
CC   hypertension, emphysema, chronic obstructive pulmonary disease (COPD),
CC   pulmonary transplantation rejection, pulmonary infections, bronchitis,
CC   and/or cancer. AAF18434 to AAF21543 represent human polynucleotide
CC   fragments and antisense oligonucleotides used in the exemplification of
CC   the present invention
XX
SQ   Sequence 816 BP; 277 A; 137 C; 164 G; 238 T; 0 U; 0 Other;

Qy   Query Match   62.1%;   Score 379;   DB 3;   Length 816;
     Best Local Similarity   79.1%;   Pred. No. 2.9e-102;
     Matches   463;   Conservative   0;   Mismatches   120;   Indels   2;   Gaps   1;

```
Qy    2 AAGGCAAAACACTGAACATTTCAGAGCTATAGAGAATGCTTCTGAATTTGAGTTTGCTAGCT 61
         ||| ||||||| |||||||||||||||||||||||||||||||||||| |||||||||||||
Db   18 AAGGCAAAACGGAGAAGCTTTCAGAGGCCATGAGGAATGCTTCTGCATTTGAGTTTGCTAGCT 77

Qy   62 CTTGGGGCCTCCCTATGTTTCTGCCCTTTGCGTGTAGAAAATCCCATGAATAGACTGGTGGCA 121
         ||||| |||| ||  ||||||||||||||||||||||||||||||||||||||
Db   78 CTTGGAGCTGCCTACGTGTATGCCATCCCACAGAAATTCCCACAAGTGCATTGGTGAAA 137

Qy  122 GAGAGACCTTGACACTGCTCTCCACTCATCATCGAACTTGCCTAGAGGCGATGGGGAACCTGATG 181
         |||| ||||||||||||||||||  ||||||||||||||||||||  ||||||
Db  138 GAGACCTTGGCACTGCTTTCTACTCATCGAACTCTGCTGATAGAGCCAATGAGACTCGAGG 197

Qy  182 ATTCCTACTCCTCGAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATA 241
         ||||||| ||  || |||||||||||||||||||||||| |||||||||||||
Db  198 ATTCCTGTTCCTGTACATAAAAAATCCACCACTGTGCGAAGAAATCTTTCAGGGAATA 257

Qy  242 GACACATTGAAGAACCAAAACTGCCCACGGGAGGGGGTGGTGAAAACTATATTCCAAAACTTG 301
         |||||| ||||||||||||||||||||||||||||||||||||||||||||
Db  258 GGCACACTGGAGAGTCAAAACTGTGCAAGGGGGTACTGTGGAAAGACTATTCAAAAACTTG 317

Qy  302 TCTTTAATAAAAGAACCCAAAAAAAAAAAGGTGCAGGGAAGATTGGAGA 361
         || || |||||||  |||||||||||  ||||||||||||||||
Db  318 TCCTTAATTAAAGAAATAACAATTGACGGCCCAAAAAAAAAAAAGGTGCAGGGAAGACGGGAGA 377

Qy  362 GTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGGACA 421
         || || ||||||||||||||| |||||||||||||||||||| ||||||||
Db  378 GTAAACCAAATTCCTAGACTACTACCTGGTAAGAGTTCTTGGTGTAATAACCGGATGGATA 437

Qy  422 CCGGAAAGTTGAGAGAACAAAAACCGGCCTTATTGTTAGTGTGAAGAAGAATG---GTT 479
         |||||||||||||||  ||||||  |||||| ||||||||| |||||||| |||
Db  438 ATAGAAAAGTTGAGACTAAACTGGTTTGTTTGGAGGACAAGGACATT 497

Qy  480 TTTTGGCGATGAGAATGAGGCGCCCAACAACGTAGGGACTTAATGGCCAGTATAACTAAG 539
         |||||||||| ||  |||||| ||||||||||||||||||||||||||
Db  498 TTACTGCAGTGACAAAGTAAATATTTCAGGCCATCCTACTTATCA 584

Qy  540 CTTCAGAGACAAAGTAAATATTTCAGGCCATCCTACTTACTTTATCA 584
         ||||| |||||||||||||||||||||||||||||||||||| |
Db  558 CTTCAGAGGGGAAAAGTAAAATATTTCAGGCATACTGACACTTTGCCA 602
```

RESULT 11
ABZ96673
ID   ABZ96673 standard; DNA; 816 BP.
XX
AC   ABZ96673;
XX
DT   17-OCT-2003 (first entry)
XX
DE   Human nucleic acid sequence.
XX
KW   Human; antisense; lung dysfunction; nasal airway dysfunction;
KW   antiinflammatory steroid; ubiquinone; antiinflammatory; antiallergic;
KW   antiasthmatic; hypotensive; immunosuppressive; cytostatic; gene therapy;
KW   antisense gene therapy; respiratory; lung; adenosine sensitivity;
KW   adenosine receptor; bronchodilation; bronchoconstriction; lung allergy;
KW   lung inflammation; respiratory disease; ds.
XX
OS   Homo sapiens.
XX
PN   WO200285308-A2.
XX
PD   31-OCT-2002.
XX
PF   23-APR-2002; 2002WO-US013135.
XX
PR   24-APR-2001; 2001US-0286137P.
XX
PA   (EPIG-) EPIGENESIS PHARM INC.
XX
PI   Nyce JW, Li Y, Sandrasagra A, Katz E, Pabalan J, Aguilar D;
PI   Miller S, Tang L, Shahabuddin S;
XX
DR   WPI; 2003-292219/22.
XX
PT   Pharmaceutical composition for treating ailments associated with impaired
PT   respiration, has oligo(s) antisense to specific gene(s) or its
PT   corresponding RNAs, and glucocorticoid or non-glucocorticoid steroid or
PT   ubiquinone.
XX
PS   Disclosure; SEQ ID NO 11915; 872pp; English.
XX
CC   The invention relates to a novel pharmaceutical composition, which has a
CC   first active agent comprising an oligonucleotide antisense to the
CC   initiation codon, coding region, 5' or 3' end genomic flanking regions,
CC   5' and 3' intron-exon junctions, or regions within 2-10 nucleotides of
CC   junctions of genes encoding a polypeptide associated with lung and/or
CC   nasal airway dysfunction and a second active agent comprising an
CC   antiinflammatory steroid and ubiquinone. A composition of the invention
CC   has antiinflammatory, antiallergic, antiasthmatic, hypotensive,
CC   immunosuppressive, and cytostatic activity. The composition may have a
CC   use in antisense gene therapy. The composition is useful for treating or
CC   preventing a respiratory, lung or malignant disease or condition, also
CC   for enhancing the prophylactic or therapeutic respiratory effect of an
CC   antiinflammatory steroid in a subject, for reducing or depleting levels
CC   of, or reducing sensitivity to adenosine, reducing levels of adenosine
CC   receptor, producing bronchodilation, increasing levels of ubiquinone or
CC   lung surfactant in a subject's tissue, or treating bronchoconstriction,
CC   lung inflammation, lung allergies, or a respiratory disease or condition.
CC   Note: The sequence data for this patent is not represented in the printed
CC   specification, but was obtained in electronic format directly from WIPO
CC   at ftp.wipo.int/pub/published_pct_sequences
XX
SQ   Sequence 816 BP; 277 A; 137 C; 164 G; 238 T; 0 U; 0 Other;

Query Match   62.1%;   Score 379;   DB 10;   Length 816;

```
Best Local Similarity  79.1%;  Pred. No. 2.9e-102;
Matches 463;  Conservative   0;  Mismatches 120;  Indels  2;  Gaps   1;

Qy         2 AAGGCAAAACACTGAACAACATTTCAGAGCTATGAGAATGCTTCTGAGTTGCTAGCT   61
             ||||||||| ||  ||||||||||||||||||||||||||||||||||||||||||
Db        18 AAGGCAAAACGCAGAACGTTTCAGAGCCATGAGGATGCTTCTGCATTTGAGTTGCTAGCT   77

Qy        62 CTTGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCA  121
             |||||||||||||||||||||||||||||||  ||||||  ||||||||||||| ||||||
Db        78 CTTGGAGCTGCCTACCGTGTATGCCATCCCACAGAAAATCCCACAAGTGCCATCGTGTGAAA  137

Qy       122 GAGACCTTGACACTGCTCTCCACTCATCGAACTGGCTGATAGGCGATGGGGAACCTGATG  181
             |||||||||||  |||||||||||||||||||||||||||||  |||||  |||||
Db       138 GAGACCTTGGCACTGCTTTCTACTCATCGAACTCTGCTGATAGCCAATGAGACTCTGAGG  197

Qy       182 ATTCCTACTCCTGAAAATAAAAAATCACCAACTGTGCATTAAAGAAGTTTTTTCAGGGTATA  241
             |||||| ||||  || |||||||||||||||||| || ||||||||||||||||||||
Db       198 ATTCCTGTTCCTGTACATTAAAAAATCACCAACTGTGCACTGAAGAAAATCTTTCAGGGAATA  257

Qy       242 GACACATTGAAGAACCAAACTGCCCACGGGGGAGGCTTGTGGATAAACTATTCCAAAACTTG  301
             |||||||||||||||||||||||||||| ||| ||||||||||  || |||||||||||
Db       258 GGCACACTGGAGAGTCAAAACTGTGCAAGGGGGTACTGTCTGGGAAAAGACTATTCAAAAACTTG  317

Qy       302 TCTTTAATAAAAGAAACACATAGACGGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGA  361
             |||||||||||||||||||||| |||||||| |||||||| |||||||||||||||
Db       318 TCCTTAATAAAAGAAAATACATTGACGGGCCAAAAAAAAGTGTGGAGGAGAAAGAACGGAGA  377

Qy       362 GTGACAAAGTTCCTCAGACTACCTGGAGTATATTCTTGGGTGTAATAAAACACCGGAGTGGACA  421
             |||||||||||||  || |||||||||||||||||||||||||||| ||||||||
Db       378 GTAAACCAATTCCTAGACTACCTGCAAGAGTTTCTTCTGGTGTAATGAACACCCGAGTGGATA  437

Qy       422 CCGGAAAGTTGGAGAACAAACCGGCTTATTGTAGTGGAAGATTTTGGAGAAGGAATG--GTT  479
             ||||||||||||  |||||||||| ||| ||| ||||||||||||||||||   ||
Db       438 ATAGAAAGTTGAGACTAAACGGTTGTTGTGCAAGATTTTGCGAGGAGAAGGACATT  497

Qy       480 TTTTGGCGATGAGAATGAGGGGCCAACCAACAGTAGGGGACTTAATGGCCAGTATAACTAAG  539
             |||| |||||||||||| || |||| |||||||||||||||||||| |||||||||||
Db       498 TTACTGCAGTGGAATGAGGGCCAAGAAAGAGTCAGGCCCTTAATTTCAATAATAAATTTAA  557

Qy       540 CTTCAGAGACAAAGTAAATATTTTCAGGCATCCTACTACTTTATCA  584
             |||||||||||||||||||||||||||||||| |
Db       558 CTTCAGAGGGAAAGTAAATATTTCAGGCATACTGACACTTTCCCA  602
```

```
RESULT 12

ID    ACF63368 standard; DNA; 816 BP.
XX
AC    ACF63368;
XX
DT    09-OCT-2003  (first entry)
XX
DE    Human interleukin 5 gene SEQ ID NO:90.
XX
KW    Human; pharmacological; hypotensive; antilipaemic; laxative;
KW    dermatological; antidepressant; tranquilliser; antiinflammatory; eczema;
KW    antiulcer; antimigraine; neuroprotective; antiparkinsonian; analgesic;
KW    gynaecological; virucide; vulnerary; antiarthritic; antipsoriatic; cold;
KW    antimicrobial; cytostatic; litholytic; pathological disorder; depression;
KW    abnormal appetite; anxiety; hypertension; hypercholesterolaemia; hyperlipidaemia;
KW    erectile dysfunction; hypertension; stress; inflammatory bowel syndrome;
KW    ulcerative colitis; Crohn's disease; renal stone; gall stone; migraine;
KW    constipation; headache; seizure; multiple sclerosis; polymyositis;
KW    fibromyalgia; Parkinson's disease; amyotrophic lateral sclerosis; trauma;
KW    chronic pain; pre-menstrual syndrome; sinusitis; carpal tunnel syndrome;
KW    chronic fatigue syndrome; rosacea; arthritis; psoriasis; prostatis;
KW    inflammation; heart burn; infection; colon cancer; malignant melanoma;
KW    skin disorder; gene; ds.
XX
OS    Homo sapiens.
XX
PN    WO200306478-A1.
```

Right column:

```
PD    23-JAN-2003.
XX
PF    10-JUL-2002; 2002WO-US021664.
XX
PR    10-JUL-2001; 2001US-0303820P.
XX
PA    (OLIG-) OLIGOS ETC INC.
XX
PI    Dale RMK, Arrow A, Thompson T;
XX
DR    WPI; 2003-221709/21.
XX
PT    Composition with a modified oligonucleotide useful for treating a patient
PT    with a pathological disorder such as abnormal appetite, hypertension,
PT    eczema, anxiety, stress, and cancer.
XX
PS    Claim 6; Page 90; 173pp; English.
XX
CC    The present invention describes a composition (I) suitable for
CC    administration in a mammal, which comprises a modified oligonucleotide
CC    (II) of 7-75 nucleotides containing 7 or more contiguous ribose groups
CC    linked by achiral 5'-3' internucleoside phosphate linkages, where the
CC    modified oligonucleotide is complementary to a region of a gene
CC    associated with a pathological disorder. Also described: (I) a
CC    nutritional supplement comprising (II); and (2) a cosmetic composition
CC    comprising (II), where the modified oligonucleotide is complementary to a
CC    region of a gene associated with a skin disorder. (I) and (II) can have
CC    hypotensive, antilipaemic, vasotropic, dermatological, antidepressant,
CC    tranquilliser, antiinflammatory, antiulcer, laxative, antimigraine,
CC    neuroprotective, antiparkinsonian, analgesic, gynaecological, virucide,
CC    vulnerary, antiarthritic, antipsoriatic, antimicrobial, cytostatic and
CC    litholytic activities. (I) can be used for treating a patient with a
CC    pathological disorder selected from abnormal appetite, hypertension,
CC    hypercholesterolaemia, hyperlipidaemia, erectile dysfunction, eczema,
CC    depression, anxiety, stress, inflammatory bowel syndrome, ulcerative
CC    colitis, Crohn's disease, renal stones, gall stones, constipation, colds,
CC    migraine headache, seizure, multiple sclerosis, polymyositis, sinusitis,
CC    fibromyalgia, Parkinson's disease, amyotrophic lateral sclerosis (ALS),
CC    chronic pain, pre-menstrual syndrome, trauma, carpal tunnel syndrome,
CC    chronic fatigue syndrome, rosacea, arthritis, psoriasis, prostatis,
CC    inflammation, heart burn, infection, poison ivy, colon cancer, malignant
CC    melanoma, and malignant nasal polyps. The nutritional supplement is
CC    useful for supplementing the diet of an individual, and the cosmetic
CC    composition is useful for improving the appearance of the skin in an
CC    individual with a skin disorder. ACF63279 to ACF63410 represent
CC    nucleotide sequence given in the exemplification of the present invention
XX
SQ    Sequence 816 BP; 277 A; 137 C; 164 G; 238 T; 0 U; 0 Other;
```

```
Query Match           62.1%;  Score 379;  DB 10;  Length 816;
Best Local Similarity 79.1%;  Pred. No. 2.9e-102;
Matches 463;  Conservative   0;  Mismatches 120;  Indels  2;  Gaps   1;

Qy         2 AAGGCAAAACACTGAACAACATTTCAGAGCTATGAGAATGCTTCTGAGTTGCTAGCT   61
             ||||||||| ||  ||||||||||||||||||||||||||||||||||||||||||
Db        18 AAGGCAAAACGCAGAACGTTTCAGAGCCATGAGGATGCTTCTGCATTTGAGTTGCTAGCT   77

Qy        62 CTTGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCA  121
             |||||||||||||||||||||||||||||||  ||||||  ||||||||||||| ||||||
Db        78 CTTGGAGCTGCCTACCGTGTATGCCATCCCACAGAAAATCCCACAAGTGCCATCGTGTGAAA  137

Qy       122 GAGACCTTGACACTGCTCTCCACTCATCGAACTGGCTGATAGGCGATGGGGAACCTGATG  181
             |||||||||||  |||||||||||||||||||||||||||||  |||||  |||||
Db       138 GAGACCTTGGCACTGCTTTCTACTCATCGAACTCTGCTGATAGCCAATGAGACTCTGAGG  197

Qy       182 ATTCCTACTCCTGAAAATAAAAAATCACCAACTGTGCATTAAAGAAGTTTTTTCAGGGTATA  241
             |||||| ||||  || |||||||||||||||||| || ||||||||||||||||||||
Db       198 ATTCCTGTTCCTGTACATTAAAAAATCACCAACTGTGCACTGAAGAAAATCTTTCAGGGAATA  257

Qy       242 GACACATTGAAGAACCAAACTGCCCACGGGGGAGGCTTGTGGATAAACTATTCCAAAACTTG  301
             |||||||||||||||||||||||||||| ||| ||||||||||  || |||||||||||
Db       258 GGCACACTGGAGAGTCAAAACTGTGCAAGGGGGTACTGTCTGGGAAAAGACTATTCAAAAACTTG  317
```

Qy   302 TCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAAGGTGTGCAGGAGGAGAAGGAGA 361
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   318 TCCTTAATAAAGAAAATACATTGACGCGCCAAAAAAAAAGTGTGGAGGAGAAAGACGGAGA 377

XX

Qy   362 GTGACAAAAGTTCCTAGACTACCTGAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACA 421
           |||||| ||||| |||||||||||||||||||||||||||||||||||| |||||||
Db   378 GTAAACCAATTCCTAGACTACCTGCAAGAGTTTCTTGGTGTGTAATGAACACCGAGTGGATA 437

XX

Qy   422 CCGGAAAAGTTGAGACAAACCGGCTTATTGTAGTGGAAGAGTTTTGGAGAAGAAATG--GTT 479
           ||||||||||||||||||||||||||| |||||||||||| ||||||||||||||| |||
Db   438 ATAGAAAAGTTGAGACTAAACTGGTTTGTTGCAGCCAAAGATTTTGGAGGAGAAGGACATT 497

XX

Qy   480 TTTTGGCGATGGAGAATGAGGGGCCACCAACCAACAGTAGGGACTTAATGGCCAGTATAACTTG 539
           ||||||||||||||||||||||||||||||| |||||||||||||||||||||||||| |||
Db   498 TTACTGCAGTGAGAATGAGGGGCCCAAGAAAGAGTCAGGCGCCTTAATTTCAATATAATTTAA 557

XX

Qy   540 CTTCAGAGACAAAAGTAAATATTTCAGGCATCCTACTACTTTATCA 584
           |||||||||||||||||||||||||||||||||||||||||||||
Db   558 CTTCAGAGGGAAAAGTAAATATTTCAGGCATACTGACACTTTGCCA 602

AC   ADP56009;
XX

ID   ADP56009 standard; cDNA; 816 BP.
XX

DT   18-NOV-2004 (first entry)
XX

DE   Human PRO cDNA sequence SEQ ID NO:1985.
XX

KW   human; PRO; immune related disease; inflammatory immune response;
KW   immune response stimulation; antiallergic; antianaemic; antiarthritic;
KW   antiasthmatic; antidiabetic; antiinflammatory; antipsoriatic;
KW   antirheumatic; antithyroid; CNS; dermatological; gastrointestinal;
KW   haemostatic; hepatotropic; immunostimulant; immunosuppressive; muscular;
KW   nephrotropic; neuroprotective; osteopathic; respiratory; vasotropic;
KW   virucide; gene therapy; gene; ss.
XX

OS   Homo sapiens.
XX

PN   WO200039956-A2.
XX

PD   13-MAY-2004.
XX

PF   28-OCT-2003; 2003WO-US034381.
XX

PR   29-OCT-2002; 2002US-0422472P.
XX

PA   (GETH) GENENTECH INC.
XX

PI   Aggarwal S, Clark H, Gurney AL, Schoenfeld J, Williams PM,
PI   Wood WI, Wu TD;
XX

DR   WPI; 2004-376182/35.
DR   P-PSDB; ADP56010.
XX

PT   New PRO polynucleotides and polypeptides, useful in diagnosing
PT   and treating an immune related disease, e.g. systemic lupus
PT   erythematosus, rheumatoid arthritis, diabetes mellitus or asthma and in
PT   stimulating an immune response.
XX

PS   Claim 2; SEQ ID NO 1985; 3000pp; English.
XX

CC   The present invention describes an isolated PRO nucleic acid (I). Also
CC   described: (1) a vector comprising (II); (2) a host cell comprising the
CC   vector of (1); (3) a process for producing a PRO polypeptide; (4) an
CC   isolated PRO polypeptide; (5) a chimeric molecule comprising the
CC   polypeptide of (4) fused to a heterologous amino acid sequence; (6) an
CC   antibody which specifically binds to a polypeptide of (4); (7) a
CC   composition of matter comprising a polypeptide of (4), an agonist or
CC   antagonist of the polypeptide or an antibody that binds to the
CC   polypeptide in combination with a carrier; (8) an article of manufacture

CC   comprising a container, a label on the container and a composition of
CC   matter of (7); (9) a method of treating an immune related disease in a
CC   mammal; (10) a method for determining the presence of a PRO polypeptide
CC   in a sample suspected of having the polypeptide; (11) a method of
CC   diagnosing an immune related disease or an inflammatory immune response
CC   in mammal; (12) a method of identifying a compound that inhibits or
CC   mimic the activity of or expression of a gene encoding a PRO polypeptide
CC   ; and (13) a method of stimulating the immune response in a mammal. The
CC   PRO sequences have antiallergic, antianaemic, antiarthritic,
CC   antiasthmatic, antidiabetic, antiinflammatory, antipsoriatic,
CC   antirheumatic, antithyroid, CNS, dermatological, gastrointestinal,
CC   haemostatic, hepatotropic, immunostimulant, immunosuppressive, muscular,
CC   nephrotropic, neuroprotective, osteopathic, respiratory, vasotropic and
CC   virucide activities, and can be used in gene therapy. The nucleic acid
CC   (I) and the encoded polypeptides, compositions, kits and methods are
CC   useful in diagnosing and treating an immune related disease and in
CC   stimulating an immune response. The present sequence represents a human
CC   PRO nucleotide sequence from the present invention.
XX

SQ   Sequence 816 BP; 277 A; 137 C; 164 G; 238 T; 0 U; 0 Other;

Query Match   62.1%; Score 379; DB 13; Length 816;
Best Local Similarity   79.1%; Pred. No. 2.9e-102;
Matches   463; Conservative   0; Mismatches 120; Indels   2; Gaps   1;

Qy   2 AAGGCAAACACTGAACATTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCT 61
           |||||||||| |||||||||||||||||||||||| |||||| |||||||||||||||
Db   18 AAGGCAAACGCAGAACGTTTCAGAGGCCATGAGGCATGCTTCTGCCATTTGAGTTTGCTAGCT 77

Qy   62 CTTGGGGCTCGCCTATGTTTCTGGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCA 121
           ||||||| |||| |||||||||||||||||||||||||||| ||||| |||||||||||||
Db   78 CTTGGGAGCTGCCTACCGTGTATGCCATCCCACAGAAAATTCCCACAGTGCCAATTGGTGAAA 137

Qy   122 GAGACCTTGACACTGCTTCTCCACTCATCGAACTTGGCTGTAGGCCGGATNGGGAACCTGATG 181
           |||||||||||||||||||||| ||||||||||||||||||||||||| ||||||||||
Db   138 GAGACCTTGGCACTGCTTTCTTTCACTCATCGAACTCGCTGGATAGCCAATGAGACTCTGAGG 197

Qy   182 ATTCCTCACTCCTGAAAATAAAAATCACCAACTGCATTAAAGAAGTTTTTCAGGGTATA 241
           ||||| |||| |||||||||||| ||||| ||||||| || ||| |||||||| ||
Db   198 ATTCCTGTTCCTGTACATAAAAATCACCAACTGTGCACTGAAGAGAAATCTTTCAGGGAATA 257

Qy   242 GACACAATTGAAGAACCAAAACTGCCCACGGGGGAGGCGTTGGTTGGATAAAACTATTCCAAAACTTG 301
           |||||| ||||||||| ||||||||||| |||||||| ||||||||| ||||| |||||||||||
Db   258 GGCACACTGGAGAGTCAAACCTGTGCAAGGGGGTACTGTGGAAAGACTATTCAAAAAACTTG 317

Qy   302 TCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAAGGTGTGCAGGAGGAGAAGGAGA 361
           || ||||||||||||||||| |||| ||||||||||| ||||||||||||||||||||||
Db   378 TCCTTAATAAAGAAAATACATTGACGCGCCAAAAAAAAAGTGTGGAGGAGAAAGACGGAGA 377

Qy   362 GTGACAAAAGTTCCTAGACTACCTGAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACA 421
           |||| |||||||||||||||||||| || ||||||||||||||||| ||||||||||||| |
Db   378 GTAAACCAATTCCTAGACTACCTGCAAGAGTTTCTTGGTGTGTAATGAACACCGAGTGGATA 437

Qy   422 CCGGAAAAGTTGAGACAAACCGGCTTATTGTAGTGGAAGAGTTTTGGAGAAGAAATG--GTT 479
           |||||||||||||||| |||| ||||||| |||| |||||||| ||||||||||||| |||
Db   438 ATAGAAAAGTTGAGACTAAACTGGTTTGTTGCAGCCAAAGATTTTGGAGGAGAAGGACATT 497

Qy   480 TTTTGGCGATGGAGAATGAGGGGCCACCAACCAACAGTAGGGACTTAATGGCCAGTATAACTTG 539
           || ||||||||||||||||||||| || ||| |||||||||| ||||| ||| || |||
Db   498 TTACTGCAGTGAGAATGAGGGGCCCAAGAAAGAGTCAGGCGCCTTAATTTCAATATAATTTAA 557

Qy   540 CTTCAGAGACAAAAGTAAATATTTCAGGCATCCTACTACTTTATCA 584
           |||||||| ||||||||||||||||||||||| ||| ||||| ||
Db   558 CTTCAGAGGGAAAAGTAAATATTTCAGGCATACTGACACTTTGCCA 602

RESULT 14
AC   AAA34858;
XX

ID   AAA34858 standard; DNA; 4057 BP.
XX

DT   28-JUL-2000 (first entry)

XX
DE   Human adenosine receptor related polynucleotide SEQ ID NO:2547.
XX
KW   Human; adenosine receptor; low adenosine antisense oligonucleotide;
KW   phosphorothioate; impaired respiration; inflammation; allergy;
KW   allergic disease; bronchoconstriction; inhibitor; antiinflammatory;
KW   antiallergic; antiasthmatic; cytostatic; analgesic; impaired airway;
KW   lung disease; ischaemic condition; pulmonary vasoconstriction; asthma;
KW   respiratory distress syndrome; pain; cystic fibrosis; emphysema;
KW   pulmonary hypertension; chronic obstructive pulmonary disease; COPD;
KW   cancer; leukaemia; lymphoma; carcinoma; metastasis; ss.
XX
OS   Homo sapiens.
XX
PN   WO20009525-A2.
XX
PD   24-FEB-2000.
XX
PF   03-AUG-1999;   99WO-US017712.
XX
PR   03-AUG-1998;   98US-0095212P.
XX
PA   (UYEC-) UNIV EAST CAROLINA.
XX
PI   Nyce JW;
XX
DR   WPI; 2000-205971/18.
XX
PT   New antisense oligonucleotides useful for treating e.g. pulmonary
PT   vasoconstriction, inflammation, allergies, asthma, hypertension,
PT   bronchitis, emphysema, respiratory distress syndrome, ischemia or
PT   cancers.
XX
PS   Disclosure; Page 717-718; 1343pp; English.
XX
CC   The present invention describes a new composition comprising an antisense
CC   oligonucleotide (ON) with low adenosine (up to 15%), which targets
CC   nucleic acids involved in bronchoconstriction, allergies, and/or
CC   inflammation. The ON can have antiinflammatory, antiallergic,
CC   antiasthmatic, cytostatic and analgesic activities. The compositions are
CC   useful for the treatment of diseases associated with inflammation,
CC   impaired airways, including lung disease and diseases whose secondary
CC   effects afflict the lungs of a subject. They can be used for treating
CC   e.g. ischaemic conditions, pulmonary vasoconstriction, allergies, asthma,
CC   impeded respiration, respiratory distress syndrome, pain, cystic
CC   fibrosis, pulmonary hypertension, emphysema, chronic obstructive
CC   pulmonary disease (COPD), and cancers such as leukaemias, lymphomas,
CC   carcinomas, and cancers which may metastasise to the lungs, including
CC   breast and prostate cancer. The reduction of the adenosine content of the
CC   ONs reduces side effects. The A-containing ONs break down with the
CC   release of deoxyadenosine which activates adenosine receptors causing
CC   bronchoconstriction and inflammation. AAA32213 to AAA35312 represent the
CC   nucleotide sequences given in the sequence listing from the present
CC   invention, which correspond to SEQ ID NO:1 to 2815, and then the last 185
CC   sequences are also called SEQ ID NO:11 to 1680 (AAA32323 to
CC   from the previously named sequences. SEQ ID NO:1 to 185, but the sequences differ
CC   AAA33992) are specifically claimed ONs from the present invention. N.B.
CC   Sequences given in the disclosure of the present invention do not match
CC   up with their corresponding SEQ ID NO: sequences given in the sequence
CC   listing
XX
SQ   Sequence 4057 BP; 1303 A; 683 C; 796 G; 1275 T; 0 U; 0 Other;

Query Match   62.1%; Score 379; DB 3; Length 4057;
Best Local Similarity   79.1%; Pred. No. 5.7e-102;
Matches 463; Conservative   0; Mismatches 120; Indels 2; Gaps 1;

```
Qy      2 AAGGCAAACACTGAACATTTCAGAGACTTATGAGAATCCTTCTTGAATTTGAGTTTGCTAGCT 61
          ||||||||| ||||| |||||||||||||| ||||| ||||||||| |||||||||||||||
Db   3259 AAGGCAAACCGAGAAGACGTTTCAGAGAGCCATGAGGATCCTTCTTCTGCATTTGAGTTTGCTAGCT 3318

Qy     62 CTTGGGGCTGCCTATGTTTCTCGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCA 121
          |||||| |||||||| |||| ||||||| |||||||| ||| || |||| ||||||||||
Db   3319 CTTGGGAGCTGCCTACGTGTATGCCATCCCACGAGAAATTCCCAGAGAAGTGCATTGGTGAAA 3378
```

RESULT 15
AAF20980
ID   AAF20980 standard; DNA; 4057 BP.
XX
AC   AAF20980;
XX
DT   14-MAR-2001 (first entry)
XX
DE   Human low adenosine antisense oligonucleotide related sequence #2547.
XX
KW   Low adenosine antisense oligonucleotide; phosphorothioate; allergy;
KW   human; airway disorder; bronchoconstriction; lung inflammation;
KW   surfactant depletion; respiratory; bronchodilator; antiinflammatory;
KW   immunosuppressive; antiasthmatic; analgesic; hypotensive; cytostatic;
KW   respiratory obstruction; pulmonary obstruction; impeded respiration;
KW   surfactant hypoproduction; pulmonary vasoconstriction; asthma; RDS;
KW   respiratory distress syndrome; pain; cystic fibrosis; allergic rhinitis;
KW   pulmonary hypertension; emphysema; pulmonary transplantation rejection;
KW   chronic obstructive pulmonary disease; pulmonary infection; bronchitis;
KW   cancer; ss.
XX
OS   Homo sapiens.
XX
PN   WO20062736-A2.
XX
PD   26-OCT-2000.
XX
PF   24-MAR-2000; 2000WO-US008020.
XX
PR   06-APR-1999; 99US-0127958P.
XX
PA   (UYEC-) UNIV EAST CAROLINA.
PA   (NYCE/) NYCE J W.
XX
PI   Nyce JW;
XX
DR   WPI; 2000-679539/66.
XX

```
Db   3319 CTTGGGAGCTGCCTACGTGTATGCCATCCCACGAGAAATTCCCAGAGAAGTGCATTGGTGAAA 3378
Qy    122 GAGACCTTGACACTGCTCTCCACTCATCATCGAACTTGGCTGATAGGCCGATGGGAACCTGATG 181
          ||||| |||| ||||||| | ||||||||||||||| | ||||||||| |||| ||||| ||
Db   3379 GAGACCCTTGGCACTGCTTCTACTCATCGAACTCTCGTGATAGCCAATGAGACTCTGAGG 3438
Qy    182 ATTCCTACTCCTGAAAATAAAAATCACCAACTGCATTAAAGAAGTTTTTCAGGGTATA 241
          ||||| | || |||| ||||||||||||||||||| | |||||| ||| |||||| ||
Db   3439 ATTCCTGTTCCCTGTACATAAAAATCACCAACTGCACTGAAGAAAATCTTTCAGGGAATA 3498
Qy    242 GACACATTGAAGAACCAAAACTGCCCACGGGAGAGGCTGTGGATAAAACTATTCCAAAACTTG 301
          | ||||| |||||| |||| |||| ||| ||| | || ||||||||||| ||||| |||||||
Db   3499 GGCACACTGGGAGAGTGCAAGGGGGTACTGTGGAAAGACTATTCAAAAACTTG 3558
Qy    302 TCTTTAATAAAAGAACCACATAGAGCGCCCCAAAAAAAAAAAGGTGTGCAGGAGAAGATGGGAGGA 361
          || ||||||||| ||| ||||| | ||||| ||||||||| |||| ||||||||| ||||| |
Db   3559 TCCTTAATAAAGAAAATACATTGACCGCCCAAAAAAAAAGTGTGGGAGAAGACGGAGA 3618
Qy    362 GTGACAAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGGTGTAATAAACACCCAGTGGACA 421
          || ||||| |||||||||||||||| ||| ||||||||||||||| |||||| |||||| |
Db   3619 GTAAACCAAATTCCTAGACTACCTGCCAAGAGTTTCTTGGGTGTAATGAACACCCGAGTGGATA 3678
Qy    422 CCGGAAAGTTCAGAACAAAACCGGCTTATTGTTAGTTGGAAGAGATTTTGCGAGGAATGGTTTT 481
          | |||||||| ||||| ||||| |||| ||| | ||||||||||||||||| ||||| |||||
Db   3679 ATAGAAAAGTTGAGACTAAAACTGGTTTGTTGCAGCCAAAGATTTTGGGAGGAGGACATT 3738
Qy    540 CTTCAGAACAAAAGTAAAATATTTCAGGCATCCTACTACTTTATCA 584
          ||||||| | ||||||||||||||||||||| |||| ||||| |
Db   3739 TTACTCGCAGTGAGAATGAGGGCCAGAAAAGAGTCAGGCCCTTAATTTTCAATATATAATTTAA 3798
Db   3799 CTTCAGAGGGGAAAGTAAAATATTTCAGGCATACTGACACTTTGCCA 3843
```

```
PT   Low adenosine (A) content antisense oligonucleotides which do not trigger
PT   adenosine receptors during metabolism, useful e.g. for treating cancers
PT   and respiratory obstructions.
XX
PS   Disclosure; Page 788-789; 1592pp; English.
XX
CC   The present invention describes low adenosine (A) content antisense
CC   oligonucleotides and compositions (I) comprising them. In the antisense
CC   oligonucleotides the A is replaced by a 'Universal' or alternative base.
CC   (I) can have respiratory, bronchodilator, antiinflammatory, analgesic,
CC   immunosuppressive, antiasthmatic, hypotensive and cytostatic activities.
CC   The antisense oligonucleotides and (I) can be used to down-regulate the
CC   expression and or activity of target polypeptides associated with
CC   lung/respiratory disorders and malignancies, such as stimulating and
CC   activating peptide factors and transmitters, transcription factors,
CC   immunoglobulins and antibodies, antibody receptors, cytokines and
CC   chemokines, endogenously produced specific and non-specific enzymes,
CC   binding proteins, adhesion molecules and their receptors, cytokine and
CC   chemokine receptors, adenosine receptors, bradykinin receptors, central
CC   nervous system (CNS) and peripheral nervous and non-nervous system
CC   receptors, CNS and peripheral nervous and non-nervous system peptide
CC   transmitters, defensins, growth factors, vasoactive peptides and
CC   receptors, binding proteins and malignancy associated proteins. The
CC   antisense oligonucleotides may be used in this way to treat disorders
CC   including respiratory obstruction (especially pulmonary obstruction)
CC   and/or bronchoconstriction) and/or lung inflammation, allergy(ies) and/or
CC   surfactant hypoproduction which are associated with a disease or
CC   condition selected from pulmonary vasoconstriction, inflammation,
CC   allergies, asthma, impeded respiration, respiratory distress syndrome
CC   (RDS), pain, cystic fibrosis (CF), allergic rhinitis (AR), pulmonary
CC   hypertension, emphysema, chronic obstructive pulmonary disease (COPD),
CC   pulmonary transplantation rejection, pulmonary infections, bronchitis,
CC   and/or cancer. AAF18434 to AAF21543 represent human polynucleotide
CC   fragments and antisense oligonucleotides used in the exemplification of
CC   the present invention
XX
SQ   Sequence 4057 BP; 1303 A; 683 C; 796 G; 1275 T; 0 U; 0 Other;

Query Match    62.1%;  Score 379;  DB 3;  Length 4057;
Best Local Similarity  79.1%;  Pred. No. 5.7e-102;
Matches  463;  Conservative  0;  Mismatches 120;  Indels  2;  Gaps  1;

Qy        2 AAGGCAAACACTGAACATTTCAGGAGCTATGAGGAATGCTTCTGAATTTGAGTTTGCTAGCT 61
            ||||||||||||| ||||||||||||||||||||||||||||||||||||||||||||||||
Db     3259 AAGGCAAACGCAGAAACGTTTCAGAGCCATGAGGAATGCTTCTGCATTTGAGTTTGCTAGCt 3318

Qy       62 CTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCA 121
            ||||||| |||||||||||||||||||||||||||| ||||||||||||||||||||||||
Db     3319 CTTGGAGCTGCCTACGTGTATGCCATCCCACAGAAAATCCCACAAGTTGCATTGGTGAAA 3378

Qy      122 GAGACCTTGACACTGCTCTCCACTCATGAAACTTGGCGTGATAGGCGATCGGGAACCTGATG 181
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     3379 GAGACCTTGGCACTGCTTTCTACTCCGAATCTCGCGTGATAGCCCAATGAGACTCTGAGG 3438

Qy      182 ATTCCTACTCCCTGAAAATAAAAATCACCAACTGTGCACTGAAGAAATCTTTCAGGGTATA 241
            ||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||||
Db     3439 ATTCCTGTTCCTGTACATAAAAAATCACCAACTGTGCACTGAAGAAATCTTTCAGGGATTA 3498

Qy      242 GACACATTGAAGAACCAAACTGCCCACGCGGGAGGGCTGTGGATAAAACTATTCCAAAACTTG 301
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     3499 GGCACACTGGAGAGTCAAAACTGTGCAAGGGTACTGGGAAAGACTATTCAAAAACTTG 3558

Qy      302 TCTTTAATAAAAGAAGAACACATAGAGCGCCAAAAAAAAGGTGTCCAGGAGGAAAACATGGAGA 361
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     3559 TCCTTAATAAAGAAATACATTGACGGCCAAAAAAAAACGTGGAGAAGAACGGGAGA 3618

Qy      362 GTGACAAAGTTCCTAGACTACCTGCCAAGTATTTCTTGGTGTAATAAACCGAGTGGACA 421
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     3619 GTAAACCAAATTCCTAGACTACCTGCCAAGAGTTTCTTGGTGTAATGAACACCGAGTGGATA 3678

Qy      422 CCGGAAAGTTGAGAACAAACCGGCCTATTGTAGTTGTGCAGCCAAAGATTTTGGAGGAAGGAATGGTTTTT 481
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     3679 ATAGAAAGTTGAGACTAAACTGGTTTGTTGCAGCCAAAGATTTTGGAGGAAGGACATT 3738

Qy      482 TT--GGCGATCGAGAATGAGGGCCCAACCACCAAACAGTAGGGACTTAAGTGGCCAGTATAACTAAG 539
            ||  |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     3739 TTACTGCAGTGAGAATGAGGGCCCAAGAAAGAGTCAGGCGCATCCTACTACTTTATCA 3798

Qy      540 CTTCAGGAGCAAAAGTAAAATATTTCAGGCATCCTACTACTTTATCA 584
            |||||||||||||||||||||||||||||||||||||||||||||||
Db     3799 CTTCAGGAGGGGAAAAGTAAATAATTTCAGGCATACTGACACTTTGCCA 3843
```

Search completed: August 8, 2005, 09:19:49
Job time : 412.892 secs

```
OM nucleic - nucleic search, using sw model

                     GenCore version 5.1.6
                     Copyright (c) 1993 - 2005 Compugen Ltd.

Run on:          August 7, 2005, 09:34:25 ; Search time 506.007 Seconds
                                            (without alignments)
                                            7814.559 Million cell updates/sec

Title:           US-10-787-382-4
Perfect score:   610
Sequence:        1 caaggcaaacactgaacatt.........acaagagaaatatattcgag 610

Scoring table:   IDENTITY_NUC
                 Gapop 10.0 , Gapext 1.0

Searched:        7297361 seqs, 324162794 residues

Total number of hits satisfying chosen parameters:   14594722

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
                 Maximum Match 100%
                 listing first 45 summaries

Database :       Published_Applications_NA:*
                 1:  /cgn2_6/ptodata/2/pubpna/US07_PUBCOMB.seq:*
                 2:  /cgn2_6/ptodata/2/pubpna/PCT_NEW_PUB.seq:*
                 3:  /cgn2_6/ptodata/2/pubpna/US06_NEW_PUB.seq:*
                 4:  /cgn2_6/ptodata/2/pubpna/US06_PUBCOMB.seq:*
                 5:  /cgn2_6/ptodata/2/pubpna/US07_NEW_PUB.seq:*
                 6:  /cgn2_6/ptodata/2/pubpna/PCTUS_PUBCOMB.seq:*
                 7:  /cgn2_6/ptodata/2/pubpna/US08_NEW_PUB.seq:*
                 8:  /cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*
                 9:  /cgn2_6/ptodata/2/pubpna/US09A_PUBCOMB.seq:*
                 10: /cgn2_6/ptodata/2/pubpna/US09B_PUBCOMB.seq:*
                 11: /cgn2_6/ptodata/2/pubpna/US09_NEW_PUB.seq:*
                 12: /cgn2_6/ptodata/2/pubpna/US09C_PUBCOMB.seq:*
                 13: /cgn2_6/ptodata/2/pubpna/US10A_PUBCOMB.seq:*
                 14: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
                 15: /cgn2_6/ptodata/2/pubpna/US10C_PUBCOMB.seq:*
                 16: /cgn2_6/ptodata/2/pubpna/US10D_PUBCOMB.seq:*
                 17: /cgn2_6/ptodata/2/pubpna/US10E_PUBCOMB.seq:*
                 18: /cgn2_6/ptodata/2/pubpna/US10F_PUBCOMB.seq:*
                 19: /cgn2_6/ptodata/2/pubpna/US10G_PUBCOMB.seq:*
                 20: /cgn2_6/ptodata/2/pubpna/US10H_PUBCOMB.seq:*
                 21: /cgn2_6/ptodata/2/pubpna/US10I_PUBCOMB.seq:*
                 22: /cgn2_6/ptodata/2/pubpna/US10_NEW_PUB.seq:*
                 23: /cgn2_6/ptodata/2/pubpna/US11A_PUBCOMB.seq:*
                 24: /cgn2_6/ptodata/2/pubpna/US11_NEW_PUB.seq:*
                 25: /cgn2_6/ptodata/2/pubpna/US60_NEW_PUB.seq:*
                 26: /cgn2_6/ptodata/2/pubpna/US60_PUBCOMB.seq:*
```

SUMMARIES

```
Result            %       Query
No.    Score  Match  Length  DB  ID               Description
------ -----  -----  ------  --  --               -----------
  1     610   100.0    610    9  US-09-755-633-4  Sequence 6, Appli
  2     610   100.0    610    9  US-09-755-633-6  Sequence 6, Appli
  3     610   100.0    610   14  US-10-218-654-80 Sequence 80, Appl
  4     610   100.0    610   14  US-10-218-654-82 Sequence 82, Appl
  5     610   100.0    610   15  US-10-262-439-80 Sequence 80, Appl
  6     610   100.0    610   15  US-10-262-439-82 Sequence 82, Appl
  7     610   100.0    610   19  US-10-787-382-4  Sequence 4, Appli
```

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

```
 8   610   100.0  610   19  US-10-787-382-6
 9   402    65.9  402    9  US-09-755-633-7
10   402    65.9  402    9  US-09-755-633-8
11   402    65.9  402   14  US-10-218-654-83
12   402    65.9  402   14  US-10-218-654-84
13   402    65.9  402   15  US-10-262-439-83
14   402    65.9  402   15  US-10-262-439-84
15   402    65.9  402   19  US-10-787-382-7
16   402    65.9  402   19  US-10-787-382-8
17   816    62.4  816   17  US-10-787-382-8
18   379    61.9  379   18  US-10-880-101A-87
19   379    62.1  379   21  US-10-929-182-4
20  377.4   61.9  816    9  US-10-641-643-1236
21   345    56.6  345    9  US-09-755-633-9
22   345    56.6  345   22  US-09-755-633-11
23   345    56.6  345   14  US-10-218-654-85
24   345    56.6  345   14  US-10-218-654-87
25   345    56.6  345   15  US-10-262-439-85
26   345    56.6  345   15  US-10-262-439-87
27   345    56.6  345   19  US-10-787-382-9
28   345    56.6  345   11  US-10-787-382-11
29  303.4   49.7  459   22  US-10-880-101A-85
30   299    49.0  671    9  US-09-755-633-21
31   299    49.0  671    9  US-10-787-382-21
32  276.6   45.3  858   16  US-10-295-074-8
33  276.6   45.3  858   20  US-10-846-911-8
34  275.6   45.2  858   16  US-10-295-074-10
35  275.6   45.2  858   20  US-10-846-911-10
36  232.4   38.1  864   16  US-10-295-074-14
37  232.4   38.1  864   20  US-10-846-911-14
38  231.4   37.9  864   16  US-10-295-074-12
39  231.4   37.9  864   20  US-10-846-911-12
40  171.8   28.2  864    9  US-09-755-633-18
41  171.8   28.2  858   19  US-10-787-382-18
42  170.2   27.9  1658   9  US-09-755-633-19
43  170.2   27.9  1658   9  US-10-787-382-19
44   154    25.2  3241  22  US-10-880-101A-91
45  152.4   25.0  3230   9  US-09-800-629A-78
```

ALIGNMENTS

```
RESULT 1
US-09-755-633-4
Sequence 4, Application US/09755633
Patent No. US20020127200A1
GENERAL INFORMATION:
APPLICANT:  Yang, Shumin
APPLICANT:  McCall, Catherine A.
APPLICANT:  Weber, Eric R.
TITLE OF INVENTION:  CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
TITLE OF INVENTION:  ACID MOLECULES, AND USES THEREOF
FILE REFERENCE:  IM-2-C1-C1
CURRENT APPLICATION NUMBER:  US/09/755,633
CURRENT FILING DATE:  2001-01-05
PRIOR APPLICATION NUMBER:  09/322,409
PRIOR FILING DATE:  1999-05-28
PRIOR APPLICATION NUMBER:  60/087,306
PRIOR FILING DATE:  1998-05-29
NUMBER OF SEQ ID NOS:  21
SOFTWARE:  PatentIn Ver. 2.1
SEQ ID NO 4
LENGTH:  610
TYPE:  DNA
ORGANISM:  Canis familiaris
FEATURE:
NAME/KEY:  CDS
LOCATION:  (29)..(430)

Query Match           100.0%;  Score 610;  DB 9;  Length 610;
Best Local Similarity 100.0%;  Pred. No. 6e-179;
```

Matches 610; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1 CAAGGCAAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTTGAATTTGAGTTTGCTAGC 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 CAAGGCAAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTTGAATTTGAGTTTGCTAGC 60

Qy   61 TCTTGGGGCGTGCCTATGTTTCTTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 TCTTGGGGCGTGCCTATGTTTCTTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC 120

Qy  121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGAT 180
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGAT 180

Qy  181 GATTCCTACTCCTGAAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTAT 240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 GATTCCTACTCCTGAAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTAT 240

Qy  241 AGACACATTGAAGAACCAAACTGCCCACGGGGAGGGCTGTGGATAAACTATTCCAAAACTT 300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 AGACACATTGAAGAACCAAACTGCCCACGGGGAGGGCTGTGGATAAACTATTCCAAAACTT 300

Qy  301 GTCTTTAATAAAAGAACACATAGAGCGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 360
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301 GTCTTTAATAAAAGAACACATAGAGCGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 360

Qy  361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGAC 420
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGAC 420

Qy  421 ACCGGAAAGTTGAGAACAAACCGGCTTATTGTAGTGGAAGATTTTGGAGAAGAATGGTTT 480
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  421 ACCGGAAAGTTGAGAACAAACCGGCTTATTGTAGTGGAAGATTTTGGAGAAGAATGGTTT 480

Qy  481 TTTGGCGATGAGAATGAGGGGCCAACCAACAGTAGGGGACTTAATGGCCAGTATAACTAAGC 540
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  481 TTTGGCGATGAGAATGAGGGGCCAACCAACAGTAGGGGACTTAATGGCCAGTATAACTAAGC 540

Qy  541 TTCAGAGACAAAAGTAAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  541 TTCAGAGACAAAAGTAAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600

Qy  601 TATATTTGAG 610
        ||||||||||
Db  601 TATATTTGAG 610
```

RESULT 2
US-09-755-633-6/c
Sequence 6, Application US/09755633
Patent No. US20020127200A1
GENERAL INFORMATION:
  APPLICANT: Yang, Shumin
  APPLICANT: McCall, Catherine A.
  APPLICANT: Weber, Eric R.
  TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
  TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
  FILE REFERENCE: IM-2-C1-C1
  CURRENT APPLICATION NUMBER: US/09/755,633
  CURRENT FILING DATE: 2001-01-05
  PRIOR APPLICATION NUMBER: 09/322,409
  PRIOR FILING DATE: 1999-05-28
  PRIOR APPLICATION NUMBER: 60/087,306
  PRIOR FILING DATE: 1998-05-29
  NUMBER OF SEQ ID NOS: 21
  SOFTWARE: PatentIn Ver. 2.1
  SEQ ID NO 6
  LENGTH: 610
  TYPE: DNA
  ORGANISM: Canis familiaris
US-09-755-633-6

Query Match   100.0%;   Score 610;   DB 9;   Length 610;

Best Local Similarity 100.0%; Conservative 0; Pred. No. 6e-179;
Matches 610; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1 CAAGGCAAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTTGAATTTGAGTTTGCTAGC 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  610 CAAGGCAAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTTGAATTTGAGTTTGCTAGC 551

Qy   61 TCTTGGGGCGTGCCTATGTTTCTTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  550 TCTTGGGGCGTGCCTATGTTTCTTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC 491

Qy  121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGAT 180
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  490 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGAT 431

Qy  181 GATTCCTACTCCTGAAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTAT 240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  430 GATTCCTACTCCTGAAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTAT 371

Qy  241 AGACACATTGAAGAACCAAACTGCCCACGGGGAGGGCTGTGGATAAACTATTCCAAAACTT 300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  370 AGACACATTGAAGAACCAAACTGCCCACGGGGAGGGCTGTGGATAAACTATTCCAAAACTT 311

Qy  301 GTCTTTAATAAAAGAACACATAGAGCGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 360
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  310 GTCTTTAATAAAAGAACACATAGAGCGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 251

Qy  361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGAC 420
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  250 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGAC 191

Qy  421 ACCGGAAAGTTGAGAACAAACCGGCTTATTGTAGTGGAAGATTTTGGAGAAGAATGGTTT 480
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  190 ACCGGAAAGTTGAGAACAAACCGGCTTATTGTAGTGGAAGATTTTGGAGAAGAATGGTTT 131

Qy  481 TTTGGCGATGAGAATGAGGGGCCAACCAACAGTAGGGGACTTAATGGCCAGTATAACTAAGC 540
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  130 TTTGGCGATGAGAATGAGGGGCCAACCAACAGTAGGGGACTTAATGGCCAGTATAACTAAGC 71

Qy  541 TTCAGAGACAAAAGTAAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   70 TTCAGAGACAAAAGTAAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 11

Qy  601 TATATTTGAG 610
        ||||||||||
Db   10 TATATTTGAG 1
```

RESULT 3
US-10-218-654-80
Sequence 80, Application US/10218654
Publication No. US20030099609A1
GENERAL INFORMATION:
  APPLICANT: Sim, Gek-Kee
  APPLICANT: Yang, Shumin
  APPLICANT: Dreitz, Matthew J.
  APPLICANT: Wonderling, Ramani S.
  TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
  TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
  FILE REFERENCE: IM-2-C1
  CURRENT APPLICATION NUMBER: US/10/218,654
  CURRENT FILING DATE: 2002-08-13
  PRIOR APPLICATION NUMBER: US/09/322,409
  PRIOR FILING DATE: 1999-05-28
  PRIOR APPLICATION NUMBER: 60/087,306
  PRIOR FILING DATE: 1998-05-29
  NUMBER OF SEQ ID NOS: 154
  SOFTWARE: PatentIn Ver. 2.0
  SEQ ID NO 80
  LENGTH: 610
  TYPE: DNA
  ORGANISM: Canis familiaris
  FEATURE:

Left column:

```
;   NAME/KEY: CDS
;   LOCATION: (29)..(430)
US-10-218-654-80

Query Match        100.0%; Score 610; DB 14; Length 610;
Best Local Similarity  100.0%; Pred. No. 6e-179;
Matches  610; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy          1 CAAGGCAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 CAAGGCAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60

Qy         61 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAAATAGAGACTGGTGGC 120
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAAATAGAGACTGGTGGC 120

Qy        121 AGAGACCTTGACACTGCTTCTCCACTCATCGAACTTGGCTGATAGGGCGGGGAAACCTGAT 180
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 AGAGACCTTGACACTGCTTCTCCACTCATCGAACTTGGCTGATAGGGCGGGGAAACCTGAT 180

Qy        181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTTCAGGGTAT 240
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTTCAGGGTAT 240

Qy        241 AGACACATTGAAGAACCAAAACTGCCCACGGGGGAGGCTGTGGGATAAACTATTCCAAAACTT 300
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 AGACACATTGAAGAACCAAAACTGCCCACGGGGGAGGCTGTGGGATAAACTATTCCAAAACTT 300

Qy        301 GTCTTTAATAAAAAGAACACATAGAGCGCCAAAAAAAAGGTGTGCAGGAGGAAAGATGGAG 360
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 GTCTTTAATAAAAAGAACACATAGAGCGCCAAAAAAAAGGTGTGCAGGAGGAAAGATGGAG 360

Qy        361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATATTTCTTGGTGTGTAATAAACACCGAGTGGAC 420
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATATTTCTTGGTGTGTAATAAACACCGAGTGGAC 420

Qy        421 ACCGGAAAGTTGAGAACAAAACCGGCTTATTGTAGTGGGGAAGAATGGGTTT 480
              |||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 ACCGGAAAGTTGAGAACAAAACCGGCTTATTGTAGTGGGGAAGAATGGGTTT 480

Qy        481 TTTGGCGATGAGAATGAGGGGGCCCAACCAACAGTAGGGGACTTAAATGGCCAGTATAACTAAGC 540
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        481 TTTGGCGATGAGAATGAGGGGGCCCAACCAACAGTAGGGGACTTAAATGGCCAGTATAACTAAGC 540

Qy        541 TTCAGAGACAAAGTAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        541 TTCAGAGACAAAGTAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600

Qy        601 TATATTTGAG 610
              ||||||||||
Db        601 TATATTTGAG 610
```

Right column:

```
Query Match        100.0%; Score 610; DB 14; Length 610;
Best Local Similarity  100.0%; Pred. No. 6e-179;
Matches  610; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy          1 CAAGGCAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        610 CAAGGCAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 551

Qy         61 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAAATAGAGACTGGTGGC 120
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        550 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAAATAGAGACTGGTGGC 491

Qy        121 AGAGACCTTGACACTGCTTCTCCACTCATCGAACTTGGCTGATAGGGCGGGGAAACCTGAT 180
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        490 AGAGACCTTGACACTGCTTCTCCACTCATCGAACTTGGCTGATAGGGCGGGGAAACCTGAT 431

Qy        181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTTCAGGGTAT 240
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        430 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTTCAGGGTAT 371

Qy        241 AGACACATTGAAGAACCAAAACTGCCCACGGGGGAGGCTGTGGGATAAACTATTCCAAAACTT 300
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        370 AGACACATTGAAGAACCAAAACTGCCCACGGGGGAGGCTGTGGGATAAACTATTCCAAAACTT 311

Qy        301 GTCTTTAATAAAAAGAACACATAGAGCGCCAAAAAAAAGGTGTGCAGGAGGAAAGATGGAG 360
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        310 GTCTTTAATAAAAAGAACACATAGAGCGCCAAAAAAAAGGTGTGCAGGAGGAAAGATGGAG 251

Qy        361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATATTTCTTGGTGTGTAATAAACACCGAGTGGAC 420
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        250 AGTGACAAAGTTCCTAGACTACCTGCAAGTATATTTCTTGGTGTGTAATAAACACCGAGTGGAC 191

Qy        421 ACCGGAAAGTTGAGAACAAAACCGGCTTATTGTAGTGGGGAAGAATGGGTTT 480
              |||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        190 ACCGGAAAGTTGAGAACAAAACCGGCTTATTGTAGTGGGGAAGAATGGGTTT 131

Qy        481 TTTGGCGATGAGAATGAGGGGGCCCAACCAACAGTAGGGGACTTAAATGGCCAGTATAACTAAGC 540
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        130 TTTGGCGATGAGAATGAGGGGGCCCAACCAACAGTAGGGGACTTAAATGGCCAGTATAACTAAGC 71

Qy        541 TTCAGAGACAAAGTAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         70 TTCAGAGACAAAGTAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 11

Qy        601 TATATTTGAG 610
              ||||||||||
Db         10 TATATTTGAG 1
```

; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 80
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (29)...(430)
US-10-262-439-80

Query Match   100.0%; Score 610; DB 15; Length 610;
Best Local Similarity   100.0%; Pred. No. 6e-179;
Matches 610; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy       1 CAAGGCAAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 CAAGGCAAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60

Qy      61 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTTGCTTGTAGAAAAATAGACTGGTGGC 120
Db      61 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTTGCTTGTAGAAAAATAGACTGGTGGC 120

Qy     121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTGGTGAGAAAATCCCATGAAATAGA 180
Db      61 AGAGACCTTGACACTGCTCTCCACTCATCGAACTGGTGAGAAAATCCCATGAAATAGA 120

Qy     181 GATTCCTACTCCTGAAAAATAAAAAATCACCAACTGTCCATTAAAGAAGTTTTTCAGG 240
Db     181 GATTCCTACTCCTGAAAAATAAAAAATCACCAACTGTCCATTAAAGAAGTTTTTCAGG 240

Qy     241 AGACACATTGAAGAACCAAACTGCCCACGGGGAGCCTGTGGATAAAACTATTCCAAAACTT 300
Db     241 AGACACATTGAAGAACCAAACTGCCCACGGGGAGCCTGTGGATAAAACTATTCCAAAACTT 300

Qy     301 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 360
Db     301 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 360

Qy     361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGAC 420
Db     361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGAC 420

Qy     421 ACCGGAAAGTTGAGAACAAACCGGGCTTATTGTAGTGGAAGAATGGTTT 480
Db     421 ACCGGAAAGTTGAGAACAAACCGGGCTTATTGTAGTGGAAGAATGGTTT 480

Qy     481 TTTGGCGGATGAGAATGAGGGCCCAACCAAACACGTAGGGACTTAAATGGCCAGTTATAACTAAGC 540
Db     481 TTTGGCGGATGAGAATGAGGGCCCAACCAAACACGTAGGGACTTAAATGGCCAGTTATAACTAAGC 540

Qy     541 TTCAGAGACAAAAGTAAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600
Db     541 TTCAGAGACAAAAGTAAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600

Qy     601 TATATTTGAG 610
           ||||||||||
Db     601 TATATTTGAG 610
```

RESULT 6
US-10-262-439-82/c
; Sequence 82, Application US/10262439
; Publication No. US20030143196A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; ACID MOLECULES, AND USES THEREOF

; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/10/262,439
; CURRENT FILING DATE: 2002-09-30
; PRIOR APPLICATION NUMBER: US/09/451,527
; PRIOR FILING DATE: 1999-12-01
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 82
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-262-439-82

Query Match   100.0%; Score 610; DB 15; Length 610;
Best Local Similarity   100.0%; Pred. No. 6e-179;
Matches 610; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy       1 CAAGGCAAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 60
Db     610 CAAGGCAAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC 551

Qy      61 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTTGCTTGTAGAAAAATAGACTGGTGGC 120
Db     550 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTTGCTTGTAGAAAAATAGACTGGTGGC 491

Qy     121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTGGTGAGAAAATCCCATGAAATAGA 180
Db     490 AGAGACCTTGACACTGCTCTCCACTCATCGAACTGGTGAGAAAATCCCATGAAATAGA 431

Qy     181 GATTCCTACTCCTGAAAAATAAAAAATCACCAACTGTCCATTAAAGAAGTTTTTCAGG 240
Db     430 GATTCCTACTCCTGAAAAATAAAAAATCACCAACTGTCCATTAAAGAAGTTTTTCAGG 371

Qy     241 AGACACATTGAAGAACCAAACTGCCCACGGGGAGCCTGTGGATAAAACTATTCCAAAACTT 300
Db     370 AGACACATTGAAGAACCAAACTGCCCACGGGGAGCCTGTGGATAAAACTATTCCAAAACTT 311

Qy     301 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 360
Db     310 GTCTTTAATAAAAGAACACATAGAGCGCCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 251

Qy     361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGAC 420
Db     250 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGAC 191

Qy     421 ACCGGAAAGTTGAGAACAAACCGGGCTTATTGTAGTGGAAGAATGGTTT 480
Db     190 ACCGGAAAGTTGAGAACAAACCGGGCTTATTGTAGTGGAAGAATGGTTT 131

Qy     481 TTTGGCGGATGAGAATGAGGGCCCAACCAAACACGTAGGGACTTAAATGGCCAGTTATAACTAAGC 540
Db     130 TTTGGCGGATGAGAATGAGGGCCCAACCAAACACGTAGGGACTTAAATGGCCAGTTATAACTAAGC 71

Qy     541 TTCAGAGACAAAAGTAAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600
Db      70 TTCAGAGACAAAAGTAAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 11

Qy     601 TATATTTGAG 610
Db      10 TATATTTGAG 1
```

RESULT 7
US-10-787-382-4
; Sequence 4, Application US/10787382
; Publication No. US20040191868A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.

RESULT 8

Left column

```
APPLICANT: Weber, Eric R.
TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
FILE REFERENCE: IM-2-C1-C1
CURRENT APPLICATION NUMBER: US/10/787,382
CURRENT FILING DATE: 2004-02-24
PRIOR APPLICATION NUMBER: US/09/755,633
PRIOR FILING DATE: 2001-01-05
PRIOR APPLICATION NUMBER: 09/322,409
PRIOR FILING DATE: 1999-05-28
PRIOR APPLICATION NUMBER: 60/087,306
PRIOR FILING DATE: 1998-05-29
NUMBER OF SEQ ID NOS: 21
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 4
LENGTH: 610
TYPE: DNA
ORGANISM: Canis familiaris
FEATURE:
NAME/KEY: CDS
LOCATION: (29)..(430)
US-10-787-382-4
```

```
Query Match     100.0%;  Score 610;  DB 19;  Length 610;
Best Local Similarity   100.0%;  Pred. No. 6e-179;
Matches 610;  Conservative 0;  Mismatches 0;  Indels 0;  Gaps 0;
```

```
Qy      1 CAAGGCAAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTGAATTTGAGTTTGCTAGC 60
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 CAAGGCAAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTGAATTTGAGTTTGCTAGC 60

Qy     61 TCTTGGGGCTGCCTAYGTTTCTGCCTTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGC 120
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 TCTTGGGGCTGCCTAYGTTTCTGCCTTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGC 120

Qy    121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGGAACCTGAT 180
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGGAACCTGAT 180

Qy    181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTTCAGGGTAT 240
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTTCAGGGTAT 240

Qy    241 AGACACATTGAAGAACCAAACTGCCCACGCGGGGAGGCTGTGGAATAAACTATTCCAAAACTT 300
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 AGACACATTGAAGAACCAAACTGCCCACGCGGGGAGGCTGTGGAATAAACTATTCCAAAACTT 300

Qy    301 GTCTTTAATAAAAGAAGAACACATAGAGCCCCAAAAAAAAAAGGGCGTGGAGAAAGATGGAG 360
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 GTCTTTAATAAAAGAAGAACACATAGAGCCCCAAAAAAAAAAGGGCGTGGAGAAAGATGGAG 360

Qy    361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTCTTTGGTGTAATAAACACCGAGTGGAC 420
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTCTTTGGTGTAATAAACACCGAGTGGAC 420

Qy    421 ACCGGAAAGTTGAGAACAAAACCGGCTTATTGTAGTGAAGATTTTGGAGAAGAATGGTTT 480
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    421 ACCGGAAAGTTGAGAACAAAACCGGCTTATTGTAGTGAAGATTTTGGAGAAGAATGGTTT 480

Qy    481 TTTGGGCATGAGAATGAGGGGCCAACCAACAGTAGGGGACTTAAATGGCCAGTATAACTAAGC 540
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    481 TTTGGGCATGAGAATGAGGGGCCAACCAACAGTAGGGGACTTAAATGGCCAGTATAACTAAGC 540

Qy    541 TTCAGAGACAAAGTAAATATTTCAGGCCATCCTACTACTTTATCACTTCACACAGATGAAA 600
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    541 TTCAGAGACAAAGTAAATATTTCAGGCCATCCTACTACTTTATCACTTCACACAGATGAAA 600

Qy    601 TATATTTGAG 610
          ||||||||||
Db    601 TATATTTGAG 610
```

Right column

```
US-10-787-382-6/c
Sequence 6, Application US/10787382
Publication No. US2004019186BA1
GENERAL INFORMATION:
APPLICANT: Yang, Shumin
APPLICANT: McCall, Catherine A.
APPLICANT: Weber, Eric R.
TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
FILE REFERENCE: IM-2-C1-C1
CURRENT APPLICATION NUMBER: US/10/787,382
CURRENT FILING DATE: 2004-02-24
PRIOR APPLICATION NUMBER: US/09/755,633
PRIOR FILING DATE: 2001-01-05
PRIOR APPLICATION NUMBER: 09/322,409
PRIOR FILING DATE: 1999-05-28
PRIOR APPLICATION NUMBER: 60/087,306
PRIOR FILING DATE: 1998-05-29
NUMBER OF SEQ ID NOS: 21
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 6
LENGTH: 610
TYPE: DNA
ORGANISM: Canis familiaris
US-10-787-382-6
```

```
Query Match     100.0%;  Score 610;  DB 19;  Length 610;
Best Local Similarity   100.0%;  Pred. No. 6e-179;
Matches 610;  Conservative 0;  Mismatches 0;  Indels 0;  Gaps 0;
```

```
Qy      1 CAAGGCAAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTGAATTTGAGTTTGCTAGC 60
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    610 CAAGGCAAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTGAATTTGAGTTTGCTAGC 551

Qy     61 TCTTGGGGCTGCCTAYGTTTCTGCCTTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGC 120
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    550 TCTTGGGGCTGCCTAYGTTTCTGCCTTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGC 491

Qy    121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGGAACCTGAT 180
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    490 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGGAACCTGAT 431

Qy    181 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTTCAGGGTAT 240
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    430 GATTCCTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTTCAGGGTAT 371

Qy    241 AGACACATTGAAGAACCAAACTGCCCACGCGGGGAGGCTGTGGAATAAACTATTCCAAAACTT 300
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    370 AGACACATTGAAGAACCAAACTGCCCACGCGGGGAGGCTGTGGAATAAACTATTCCAAAACTT 311

Qy    301 GTCTTTAATAAAAGAAGAACACATAGAGCCCCAAAAAAAAAAGGGCGTGGAGAAAGATGGAG 360
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    310 GTCTTTAATAAAAGAAGAACACATAGAGCCCCAAAAAAAAAAGGGCGTGGAGAAAGATGGAG 251

Qy    361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTCTTTGGTGTAATAAACACCGAGTGGAC 420
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    250 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTCTTTGGTGTAATAAACACCGAGTGGAC 191

Qy    421 ACCGGAAAGTTGAGAACAAAACCGGCTTATTGTAGTGAAGATTTTGGAGAAGAATGGTTT 480
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    190 ACCGGAAAGTTGAGAACAAAACCGGCTTATTGTAGTGAAGATTTTGGAGAAGAATGGTTT 131

Qy    481 TTTGGGCATGAGAATGAGGGGCCAACCAACAGTAGGGGACTTAAATGGCCAGTATAACTAAGC 540
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    130 TTTGGGCATGAGAATGAGGGGCCAACCAACAGTAGGGGACTTAAATGGCCAGTATAACTAAGC 71

Qy    541 TTCAGAGACAAAGTAAATATTTCAGGCCATCCTACTACTTTATCACTTCACACAGATGAAA 600
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     70 TTCAGAGACAAAGTAAATATTTCAGGCCATCCTACTACTTTATCACTTCACACAGATGAAA 11

Qy    601 TATATTTGAG 610
          ||||||||||
Db     10 TATATTTGAG 1
```

RESULT 9
US-09-755-633-7
; Sequence 7, Application US/0975563
; Patent No. US20020127200A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/09/755,633
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 7
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-755-633-7

Query Match 65.9%; Score 402; DB 9; Length 402;
Best Local Similarity 100.0%; Pred. No. 2.8e-114;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy   29 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT   88
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT   60

Qy   89 GCTGTGAGAAAATCCCATGAATAGACACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT  148
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTGAGAAAATCCCATGAATAGACACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT  120

Qy  149 CGAACTTGGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAATCAC  208
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 CGAACTTGGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAATCAC  180

Qy  209 CAACTGTGCATTAAACAGAAGTTTTTTCAGGGTATAGACACAATTGAAGAACCAAAACTGCCCAC  268
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 CAACTGTGCATTAAACAGAAGTTTTTTCAGGGTATAGACACAATTGAAGAACCAAAACTGCCCAC  240

Qy  269 GGGGAGGCGCTGTGGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAAACACATAGAGCGC  328
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 GGGGAGGCGCTGTGGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAAACACATAGAGCGC  300

Qy  329 CAAAAAAAAGGTGTGCCAGGAGAAGATGGAGGAGTGACAAAGTTCCTAGACTACCTGCAA  388
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301 CAAAAAAAAGGTGTGCCAGGAGAAGATGGAGGAGTGACAAAGTTCCTAGACTACCTGCAA  360

Qy  389 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCCGGAAAGT  430
         |||||||||||||||||||||||||||||||||||||||||||
Db  361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCCGGAAAGT  402
```

RESULT 10
US-09-755-633-8/c
; Sequence 8, Application US/0975563
; Patent No. US20020127200A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/09/755,633

; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 8
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-755-633-8

Query Match 65.9%; Score 402; DB 9; Length 402;
Best Local Similarity 100.0%; Pred. No. 2.8e-114;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy   29 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT   88
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  402 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT  343

Qy   89 GCTGTGAGAAAATCCCATGAATAGACACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT  148
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  342 GCTGTGAGAAAATCCCATGAATAGACACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT  283

Qy  149 CGAACTTGGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAATCAC  208
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  282 CGAACTTGGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAATCAC  223

Qy  209 CAACTGTGCATTAAACAGAAGTTTTTTCAGGGTATAGACACAATTGAAGAACCAAAACTGCCCAC  268
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  222 CAACTGTGCATTAAACAGAAGTTTTTTCAGGGTATAGACACAATTGAAGAACCAAAACTGCCCAC  163

Qy  269 GGGGAGGCGCTGTGGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAAACACATAGAGCGC  328
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  162 GGGGAGGCGCTGTGGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAAACACATAGAGCGC  103

Qy  329 CAAAAAAAAGGTGTGCCAGGAGAAGATGGAGGAGTGACAAAGTTCCTAGACTACCTGCAA  388
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  102 CAAAAAAAAGGTGTGCCAGGAGAAGATGGAGGAGTGACAAAGTTCCTAGACTACCTGCAA   43

Qy  389 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCCGGAAAGT  430
         |||||||||||||||||||||||||||||||||||||||||||
Db   42 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCCGGAAAGT    1
```

RESULT 11
US-10-218-654-83
; Sequence 83, Application US/10218654
; Publication No. US20030099609A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/10/218,654
; CURRENT FILING DATE: 2002-08-13
; PRIOR APPLICATION NUMBER: US/09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 83
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-218-654-83

Query Match 65.9%; Score 402; DB 14; Length 402;
Best Local Similarity 100.0%; Pred. No. 2.8e-114;

Left column

```
Matches  402;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy   29  ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT   88
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1  ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT   60

Qy   89  GCTGTAGAAAAATCCCATGAATAGACTCGGTGGCGAGAGACCTTGACACTGCTCCACTCAT  148
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61  GCTGTAGAAAAATCCCATGAATAGACTCGGTGGCGAGAGACCTTGACACTGCTCCACTCAT  120

Qy  149  CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC  208
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121  CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC  180

Qy  209  CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAGAACCAAAACTGCCCAC  268
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181  CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAGAACCAAAACTGCCCAC  240

Qy  269  GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC  328
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241  GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC  300

Qy  329  CAAAAAAAAAGGTGTCCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA  388
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301  CAAAAAAAAAGGTGTCCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA  360

Qy  389  GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT  430
         ||||||||||||||||||||||||||||||||||||||||||
Db  361  GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT  402
```

RESULT 12
US-10-218-654-84/c
; Sequence 84, Application US/10218654
; Publication No. US20030099609A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/10/218,654
; CURRENT FILING DATE: 2002-08-13
; PRIOR APPLICATION NUMBER: US/09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 84
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-218-654-84

Query Match   65.9%; Score 402; DB 14; Length 402;
Best Local Similarity   100.0%; Pred. No. 2.8e-114;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Right column

```
Qy  209  CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAGAACCAAAACTGCCCAC  268
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  222  CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAGAACCAAAACTGCCCAC  163

Qy  269  GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC  328
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  162  GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC  103

Qy  329  CAAAAAAAAAGGTGTCCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA  388
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  102  CAAAAAAAAAGGTGTCCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA   43

Qy  389  GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT  430
         ||||||||||||||||||||||||||||||||||||||||||
Db   42  GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT   1
```

RESULT 13
US-10-262-439-83
; Sequence 83, Application US/10262439
; Publication No. US20030143196A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/10/262,439
; CURRENT FILING DATE: 2002-09-30
; PRIOR APPLICATION NUMBER: US/09/451,527
; PRIOR FILING DATE: 1999-12-01
; PRIOR APPLICATION NUMBER: US/09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 83
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-262-439-83

Query Match   65.9%; Score 402; DB 15; Length 402;
Best Local Similarity   100.0%; Pred. No. 2.8e-114;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy   29  ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT   88
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1  ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT   60

Qy   89  GCTGTAGAAAAATCCCATGAATAGACTCGGTGGCGAGAGACCTTGACACTGCTCCACTCAT  148
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61  GCTGTAGAAAAATCCCATGAATAGACTCGGTGGCGAGAGACCTTGACACTGCTCCACTCAT  120

Qy  149  CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC  208
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121  CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC  180

Qy  209  CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAGAACCAAAACTGCCCAC  268
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181  CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAGAACCAAAACTGCCCAC  240

Qy  269  GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC  328
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241  GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC  300

Qy  329  CAAAAAAAAAGGTGTCCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA  388
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301  CAAAAAAAAAGGTGTCCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA  360
```

```
Qy  389  GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT  430
         ||||||||||||||||||||||||||||||||||||||||||||
Db  361  GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT  402
```

RESULT 14
US-10-262-439-84/c
Sequence 84, Application US/10262439
Publication No. US20030143196A1

; GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shumin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C2
;   CURRENT APPLICATION NUMBER: US/10/262,439
;   CURRENT FILING DATE: 2002-09-30
;   PRIOR APPLICATION NUMBER: US/09/451,527
;   PRIOR FILING DATE: 1999-12-01
;   PRIOR APPLICATION NUMBER: 09/322,409
;   PRIOR FILING DATE: 1999-05-28
;   PRIOR APPLICATION NUMBER: 60/087,306
;   PRIOR FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 174
;   SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 84
;   LENGTH: 402
;   TYPE: DNA
;   ORGANISM: Canis familiaris
US-10-262-439-84

  Query Match   65.9%; Score 402; DB 15; Length 402;
  Best Local Similarity   100.0%; Pred. No. 2.8e-114;
  Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy   29  ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGGGGGGCTGCCTATGTTTCTGCCTTT  88
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  402  ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGGGGGGCTGCCTATGTTTCTGCCTTT  343

Qy   89  GCTGTAGAAAATCCCATGAATAGACTGGGTGGCAGAGACCCTTGACACTGCTCTCCACTCAT  148
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  342  GCTGTAGAAAATCCCATGAATAGACTGGGTGGCAGAGACCCTTGACACTGCTCTCCACTCAT  283

Qy  149  CGAACTTGGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC  208
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  282  CGAACTTGGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC  223

Qy  209  CAACTGTGCATTAAAGAAGTTTTTCAGGGTTATAGACACATTGAAGAACACAAACTGCCCAC  268
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  222  CAACTGTGCATTAAAGAAGTTTTTCAGGGTTATAGACACATTGAAGAACACAAACTGCCCAC  163

Qy  269  GGGGAGGCTGTGGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC  328
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  162  GGGGAGGCTGTGGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC  103

Qy  329  CAAAAAAAAAAGGTGTGCAGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA  388
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  102  CAAAAAAAAAAGGTGTGCAGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA  43

Qy  389  GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT  430
         ||||||||||||||||||||||||||||||||||||||||||||
Db   42  GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT  1
```

RESULT 15
US-10-787-382-7
Sequence 7, Application US/10787382
Publication No. US20040191868A1
; GENERAL INFORMATION:
;   APPLICANT: Yang, Shumin
;   APPLICANT: McCall, Catherine A.

;   APPLICANT: Weber, Eric R.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C1-C1
;   CURRENT APPLICATION NUMBER: US/10/787,382
;   CURRENT FILING DATE: 2004-02-24
;   PRIOR APPLICATION NUMBER: US/09/755,633
;   PRIOR FILING DATE: 2001-01-05
;   PRIOR APPLICATION NUMBER: 09/322,409
;   PRIOR FILING DATE: 1999-05-28
;   PRIOR APPLICATION NUMBER: 60/087,306
;   PRIOR FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 21
;   SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 7
;   LENGTH: 402
;   TYPE: DNA
;   ORGANISM: Canis familiaris
US-10-787-382-7

  Query Match   65.9%; Score 402; DB 19; Length 402;
  Best Local Similarity   100.0%; Pred. No. 2.8e-114;
  Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy   29  ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGGGGGGCTGCCTATGTTTCTGCCTTT  88
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1  ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGGGGGGCTGCCTATGTTTCTGCCTTT  60

Qy   89  GCTGTAGAAAATCCCATGAATAGACTGGGTGGCAGAGACCCTTGACACTGCTCTCCACTCAT  148
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61  GCTGTAGAAAATCCCATGAATAGACTGGGTGGCAGAGACCCTTGACACTGCTCTCCACTCAT  120

Qy  149  CGAACTTGGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC  208
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121  CGAACTTGGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC  180

Qy  209  CAACTGTGCATTAAAGAAGTTTTTCAGGGTTATAGACACATTGAAGAACACAAACTGCCCAC  268
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181  CAACTGTGCATTAAAGAAGTTTTTCAGGGTTATAGACACATTGAAGAACACAAACTGCCCAC  240

Qy  269  GGGGAGGCTGTGGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC  328
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241  GGGGAGGCTGTGGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC  300

Qy  329  CAAAAAAAAAAGGTGTGCAGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA  388
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301  CAAAAAAAAAAGGTGTGCAGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA  360

Qy  389  GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT  430
         ||||||||||||||||||||||||||||||||||||||||||||
Db  361  GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT  402
```

Search completed: August 7, 2005, 19:24:56
Job time : 507.007 secs

```
                                GenCore version 5.1.6
                                Copyright (c) 1993 - 2005 Compugen Ltd.

OM nucleic - nucleic search, using sw model

Run on:          August 7, 2005, 18:43:18 ; Search time 2595.79 Seconds
                 (without alignments)
                 8944.955 Million cell updates/sec

Title:           US-10-787-382-4
Perfect score:   610
Sequence:        1 caaggcaaacactgaacatt............acagatgaaatatattgag 610

Scoring table:   IDENTITY NUC
                 Gapop 10.0 , Gapext 1.0

Searched:        34239544 seqs, 19032134700 residues

Total number of hits satisfying chosen parameters:    68479088

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
                 Maximum Match 100%
                 Listing first 45 summaries

Database :       EST-*
                 1: gb_est1:*
                 2: gb_est2:*
                 3: gb_est3:*
                 4: gb_htc:*
                 5: gb_est4:*
                 6: gb_est5:*
                 7: gb_est6:*
                 8: gb_gss1:*
                 9: gb_gss2:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

                           SUMMARIES

                 %
Result           Query
No.    Score     Match  Length  DB  ID          Description
----   -----     -----  ------  --  --          -----------
  1    369.6     60.6    817     3  BC069137    BC069137 Homo sapi
  2    307.8     50.5    456     6  CD559532    CD559532 AGENCOURT
  3    307.2     50.4    456     6  CD559686    CD559686 AGENCOURT
c 4    303.4     49.7    470     6  CD559687    CD559687 AGENCOURT
c 5    303.4     49.7    492     6  CD559533    CD559533 AGENCOURT
  6    301       49.3    456     3  BC066281    BC066281 Homo sapi
c 7    301       49.3    478     6  CD559534    CD559534 AGENCOURT
c 8    300.8     49.3    463     6  CD559535    CD559535 AGENCOURT
  9    300.4     49.2    458     3  BC066279    BC066279 Homo sapi
 10    300.4     49.2    458     3  BC066280    BC066280 Homo sapi
 11    299.2     49.0    489     6  CD559536    CD559536 AGENCOURT
 12    293       48.0    467     6  CD559688    CD559688 AGENCOURT
c 13   292.4     47.9    473     6  CD559689    CD559689 AGENCOURT
c 14   292.2     47.9    405     6  AY412020    AY412020 Homo sapi
 15    280.2     45.9    405     6  CD559690    CD559690 AGENCOURT
c 16   278.4     45.6    477     6  CD559608    CD559608 AGENCOURT
c 17   277.8     45.5    622     6  CE331159    CE331159 tigr-gss-
 18    276.2     45.3    405     6  AY412021    AY412021 Pan trogl
 19    195       32.0    399     6  AY412022    AY412022 Mus muscu
 20    164.8     27.0    503     5  BQ598873    BQ598873 MI-P-E4-a
c 21   110.6     18.1    495     7  CR554944    CR554944 DKFZp469N
c 22    74.2     12.2    781     9  CR235404    CR235404 Reverse s
c 23    65.6     10.8    737     9  CR026247    CR026247 Reverse s
c 24    43.8      7.2   1101     9  CNS017KX    CNS017KX Drosophil
c 25    41.8      6.9    432     1  AA560540    AA560540 v119f05.r
c 26    40.8      6.7    677     9  CG032226    CG032226 PUIMU10TB
c 27    40.6      6.7    522     4  BI670794    BI670794 PFESToaa0
c 28    40.4      6.6    682     1  AJ794087    AJ794087 ENTNM83TF
c 29    40.4      6.6    926     8  BH135042    BH135042 ENTNM83TF
c 30    40.2      6.6    623     8  AQ576964    AQ576964 nbxb00901
  31    40.2      6.6    666     8  AQ326668    AQ326668 nbxb0038G
  32    40        6.6    317     6  CD087271    CD087271 MCI-00367
  33    40        6.6    711     9  CC804646    CC804646 ih31h05.g
  34    40        6.6    711     9  CC804646    CC804646 ih31h05.g
  35    39.8      6.5   1101     9  CNS01282    CNS01282P Drosophil
c 36   39.8      6.5    565     8  AZ370501    AZ370501 Drosophil
c 37   39.8      6.5    535     8  AZ650499    AZ650499 Drosophil
c 38   39.4      6.5    863     9  AG405650    AG405650 Mus muscu
c 39   39.2      6.4   1101     9  CNS0183C    CNS0183C Drosophil
  40    39.2      6.4    603     4  BJ328562    BJ328562 Drosophil
  41    39.2      6.4    619     4  BJ328648    BJ328648 Drosophil
  42    39.2      6.4    738     8  AQ328856    AQ328856 nbxb0043P
  43    39        6.4    905     9  CNS00D59    CNS00D59 Drosophil
  44    39        6.4    843     8  BH085356    BH085356 RPCI-24-4
c 45   39        6.4   1090     9  CD242046    CD242046 AGENCOURT
  45    39        6.4   1090     9  CNS03CPP    CNS03CPP Tetraodon
```

ALIGNMENTS

```
RESULT 1
BC069137
LOCUS       BC069137               817 bp    mRNA    linear    HTC 26-APR-2004
DEFINITION  Homo sapiens cDNA clone IMAGE:7216996, containing frame-shift
            errors.
ACCESSION   BC069137
VERSION     BC069137.1  GI:46575644
KEYWORDS    HTC.
SOURCE      Homo sapiens (human)
ORGANISM    Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 817)
AUTHORS     Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
            Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
            Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
            Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
            Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
            Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
            Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
            Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
            Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
            McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
            Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
            Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
            Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodrigues,S.,
            Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
            Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
            Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
            Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
            Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
TITLE       Generation and initial analysis of more than 15,000 full-length
            human and mouse cDNA sequences
JOURNAL     Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
PUBMED      12477932
REFERENCE   2  (bases 1 to 817)
AUTHORS     Strausberg,R.
TITLE       Direct Submission
JOURNAL     Submitted (16-APR-2004) National Institutes of Health, Mammalian
            Gene Collection (MGC), Cancer Genomics Office, National Cancer
            Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
            USA
REMARK      NIH-MGC Project URL: http://mgc.nci.nih.gov
COMMENT     Contact: MGC help desk
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Anup Madan, University of Iowa
            cDNA Library Preparation: Anup Madan, University of Iowa
```

cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Neurogenomics Research Lab,
200 B EMRB, University of Iowa, Iowa City, IA-52242
anup-madan@uiowa.edu
Jessica Fahey, Tim Nelson, Jae Goon Yoon and Anup Madan

Clone distribution: MGC clone distribution information can be found
through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
This clone has the following problem: frame shifted.

FEATURES
    source   Location/Qualifiers
    1..817
    /organism="Homo sapiens"
    /mol_type="mRNA"
    /db_xref="taxon:9606"
    /clone="IMAGE:7216996"
    /tissue_type="Synthetic constructs"
    /clone_lib="NIH_MGC_243"
    /lab_host="TOP10"
    /note="Vector: pCR Blunt II TOPO"

ORIGIN

Query Match
Best Local Similarity 60.6%; Score 369.6; DB 3; Length 817;
    79.2%; Pred. No. 5.1e-93;
Matches 464; Conservative 0; Mismatches 119; Indels 3; Gaps 2;

```
Qy     2 AAGGCAAACACTGAACATTTCAGGACTTATGAGAATGGCTATGAGAGAGAGGAGTTTGCTTCT   61
           |||||||||||||||| |||| ||||||||| ||||||||||||||  ||||||||||
Db    18 AAGGCAAACGGCAGAACGTTTCAGGACCATGAGGATGCTTCTGCATTTGAGTTTGCTAGCT   77

Qy    62 CTTGGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAATCCATGAAATAGACTGGTGGCA  121
           |||||||||||||| ||  ||||||||||||||||||||||||||||||||
Db    78 CTTGGAGCTGCCTACGTGTATGCCATCCCCACGAAAATTCCCACAAGTGCCATTGGTGAAA  137

Qy   122 GAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGATG  181
           ||||||||||||||||||| ||||||||  ||||||||||  |||||||||||
Db   138 GAGACCTTGGCACTGCTTCTCTTACTCATCGAACTTGCTGATAGGCCAATGAGACTCTGAGG  197

Qy   182 ATTCCTACTACTCCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTTCAGGGTATA  241
           ||||||  |||||  ||||||||  ||||||||||||||||||
Db   198 ATTCCTGTTCCTGTACATAAAAATCCAACTGTGCCACTGAAGAAATCTTTCAGCGAATA  257

Qy   242 GACACCATTGAAGAACACTGCCCACGGGGAGGCTGTGGATAACTATTCCAAAACTTG  301
           ||||||||||  |||||  ||||||||||||||||||||
Db   258 GGCACACTGGAGAGTCAAACTGTGGAAAGACTATTCCAAAAACTTG  317

Qy   302 TCTTTAATAAAAGAACACATAGAGCGCCCAAAAA-AAAAGGTGTGCAGGAGAAAAGATGGAG  360
           ||||||||||||||||| ||||  |||||||  ||||||||||||||||
Db   318 TCCTTAATAAAGAAAATACATTGACGCGCCAAAAAAGTGGAAGAGAAACGGAG  377

Qy   361 AGTGACAAAGTTCCTAGACTACCTCGCAAGAGTATTTCTTGGTGTAATAAAACACCGAGTGGAC  420
           |||||||||||||||||||||||||||||||||||||||
Db   378 AGTAAACCAATTCCTAGACTACACCTGCAAGAGTTTCTTGGTGTAATGAACACCGAGTGGAT  437

Qy   421 ACCGGAAAAGTTGAGGAACAAAACCGGCTTAATGTCGGAAGATTTGGAGGAAGGAATG--GT  478
           |||||||||||||||||||||| |||||||||||||||||||||||
Db   438 AATAGAAAGTTGAGGACTAAACTGGTTTGTTGTCAGCCGAAAGAGGAGGAGGACAT  497

Qy   479 TTTTTGGCGATGAGGAATGAGGGGCCAACCACAGTAGGGGACTAGGGACTATAACTAA  538
           ||||||||||||||||||||||
Db   498 TTTACTGCAGTGAGGAATGAGGGCCCAAGAAGTCAGGCCTTAATTTTCAGTATTA  557

Qy   539 GCTTCAGAGACAAAGTAAAATATTTCAGGGCATCCTACTACTTTATCA  584
           |||||| |||| ||||||||||||||  |||||||||||
Db   558 ACTTCAGAGGGAAAGTAAAATATTTCAGGCATGACTACTGACACTTGCCA  603
```

ACCESSION   CD559532
DEFINITION   IMAGE:6971772 5', mRNA sequence.
LOCUS   CD559532   456 bp   mRNA   linear   EST   11-JUN-2003
    AGENCOURT 14497057 NIH_MGC_195 Homo sapiens cDNA clone

RESULT 2
CD559532

VERSION   CD559532.1   GI:31585600
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
    Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 456)
AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL   Unpublished (1999)

COMMENT   Contact: Daniela S. Gerhard, Ph.D.
    Office of Cancer Genomics
    National Cancer Institute / NIH
    Bldg. 31 Rm10A07 Bethesda, MD 20892
    Email: cgapbs-r@mail.nih.gov
    Tissue Procurement: Narayan Bhat
    cDNA Library Preparation: Bhat Laboratory
    cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
    DNA Sequencing by: Agencourt Bioscience Corporation
    Clone distribution: MGC clone distribution information can be
    found through the I.M.A.G.E. Consortium/LLNL at:
    http://image.llnl.gov
    Plate: IRBKl row:g column:11
    High quality sequence stop: 456.

FEATURES
    source   Location/Qualifiers
    1..456
    /organism="Homo sapiens"
    /mol_type="mRNA"
    /db_xref="taxon:9606"
    /clone="IMAGE:6971772"
    /tissue_type="mixed"
    /clone_lib="DHSA (T1 phage-resistant)"
    /lab_host="NIH_MGC_195"
    /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
    loxP-HindIII; Clones from this library have been
    PCR-amplified using gene-specific primers to contain the
    complete open reading frame (based on known gene sequences
    available from NCBI's RefSeq). Template for PCR is cDNA
    derived from either pooled cytoplasmic polyA RNA from 30
    cells lines or pooled total RNA from 10 different tissues
    (from BD Biosciences/Clontech and Washington University).
    PCR products are directionally cloned into the loxP sites
    of the pDNR-Dual vector. Library constructed by Dr.
    Narayan Bhat, Earl Bere III and Hongling Liao (Gene
    Expression Laboratory, Research Technology Program, SAIC
    Frederick, NCI-Frederick, Frederick, MD 21702). For
    information on which gene each clone represents, please
    visit our anonymous ftp site at
    ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presv.dat
    a Note: this is a NIH_MGC Library."

ORIGIN

Query Match
Best Local Similarity 50.5%; Score 307.8; DB 6; Length 456;
    79.8%; Pred. No. 1.2e-75;
Matches 363; Conservative 0; Mismatches 92; Indels 0; Gaps 0;

```
Qy     8 AACACTGAACATTTCAGGAGCTTATGAGAATGGCTATGAGAGAGAGGAGTTTGCTTGGG   67
           ||||||||||||||||||||||||||||||||||||||||||||||
Db     1 AAAGCAGAACGTTTCAGGAGCCATGAGGATGCTTCTGCATTTGAGTTTGCTAGCTCTTGGA   60

Qy    68 GCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAATCCATGAAATAGACTGGTGGCAGAGACC  127
           ||||||||| ||  |||||||||||||||||||||||||||
Db    61 GCTGCCTACGTGTATGCCATCCCCACGAAAATTCCCACAAGTGCCATTGGTGAAAGAGACC  120

Qy   128 TTGACACTGCTCTCCACTCATCGGACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCT  187
           ||||||||||| ||||||||||  |||||| ||||||||  ||||||  ||||||
Db   121 TTGGCACTGCTTCTCTTACTCATCGAACTTGCTGATAGGCCAATGAGACTCTGAGGATTCCT  180

Qy   188 ACTCCTGAAAATAAAAAATCACCAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGACACA  247
           ||||| ||||||||  |||||||||| ||||||||||||||||||||||||
Db   181 GTTCCTGTACATAAAAATCCAACTGTGCCACTGAAGAAATCTTTCAGCGAATAGGCACA  240

Qy   248 TTGAAGAACACAAACTGCCCACGGGGAGGCTGTGGATAAACTATTCCAAAAACTTGTCTTTA  307
           |||||| |||   ||||||||||||||||||||||||||||||||||
Db   241 TTGGAGAGTCAAACTGTGGAAAGACTATTCCAAAAACTTGTCCTTA  307
```

ORIGIN

RESULT 3

LOCUS   CD559686   456 bp   mRNA   linear   EST 11-JUN-2003
DEFINITION   AGENCOURT_14497093 NIH_MGC_195 Homo sapiens cDNA clone
             IMAGE:6971772 3', mRNA sequence.
ACCESSION   CD559686
VERSION   CD559686.1 GI:31585754
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
  ORGANISM   Homo sapiens
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 456)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT   Contact: Daniela S. Gerhard, Ph.D.
             Office of Cancer Genomics
             National Cancer Institute / NIH
             Bldg. 31 Rm10A07 Bethesda, MD 20892
             Email: cgapbs-r@mail.nih.gov
             Tissue Procurement: Narayan Bhat
             cDNA Library Preparation: Bhat Laboratory
             cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
             DNA Sequencing by: Agencourt Bioscience Corporation
             Clone distribution: MGC clone distribution information can be
             found through the I.M.A.G.E. Consortium/LLNL at:
             http://image.llnl.gov
             Plate: IRBK1 row: g column: 11
             High quality sequence stop: 456.

FEATURES   Location/Qualifiers
     source   1..456
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971772"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxp-SalI; Site_2:
                     loxp-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cell lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSV.dat
                     a Note: this is a NIH_MGC Library."

Query Match
Best Local Similarity   50.4%;   Score 307.2; DB 6; Length 456;
Matches 363; Conservative 79.6%; Pred. No. 1.8e-75;
0; Mismatches 93; Indels 0; Gaps 0;

Qy   6 CAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTGAGTTTGCTTAGCTCTTG 65
          ||| || ||||||| | | || ||| || || ||||| ||||| | ||| |||||||
Db   456 CCAAAGCAGAGTTTCAGAGCGCCATGAGGATGCTTCTGCATTTGAGTTTGCTTAGCTCTG 397

Qy   66 GGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAAATCCATAGAATATAGACTGGTCAGA 125
          ||||||||||||||||||||| | ||||| || ||||||||||| ||||||| ||||||||
Db   396 GAGCTGCCTACGTGTATGCCATCCCACAGAAATTCCCACAAGTGCAATGGGATGGCAGAGA 337

Qy   126 CCTTGGACACTGCTTCTCCACTCATCTGCATTCGAACCTCTGATAGCCAAATGAACCTGATTC 185
          |||||||||||||||||||||||||||||| |||| ||||||| ||||| ||||| |||||
Db   336 CCTTGGCCACTGCTTCTCCACTCATCTGCATTCGAACCTCTGATAGCCAAATGAACCTGGCA 277

Qy   186 CTACTCCTGAAATAAAATACCAACTGTGCATTAAAGAGTTTTTTCAGGGTATAGACA 245
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   276 CTGTTCCTGTACATAAAAATCACCAACTGTGCCACTGAGAAAATCTTTCAGGGAATAGGCA 217

Qy   246 CATTGAAGAACCAAAACTGCCCACGCGGGAGGGCTGTGATAAACTATTCCAAAACTTGTCTT 305
          |||||||| ||||| || || |||||| |||| || ||||| || |||||||| |||||||
Db   216 CACTGGAGAGTCAAAACTGTGCAAGGGGGTACTGTGAAAGACTATTCAAAAAACTTGTCCT 157

Qy   306 TAATAAAAAGAACACAATAGAGCGCCCAAAAAAAAAAGGTGTGCAGGAGAAGATGGAGAGTGA 365
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   156 TAATAAAAAATAACATTGACGGCCCAAAAAAAAGGTGTGGAGAGAAGAAGACCGGAGAGTAA 97

Qy   366 CAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGGAGTGGACACCGG 425
          ||||| |||||||| || |||||||||||||||||||||||||||||||||||||||||||
Db   96 ACCAATTCCTAGACTACCTGCAAGAGTTTCTTGGTGTAATGACACACGGAGTGGATAATAG 37

Qy   426 AAAGTTGAGACAAAACCGGCTTTATTGTTGTAGTGGAAGA 461
          |||||||||||||||||||||| |||||||||||||||| |
Db   36 AAAGTTGAGACTAAACTGGTTTGTTGCAGCCAAAGA 1

Db   241 CTGGAGAGTCAAAACTGTGCAAGGGGGTACTGTGGAAAGACTATTCAAAAAACTTGTCCTTA 300
Qy   308 ATAAAAGAACACAATAGAGCGCCCAAAAAAAAAAGGTGTGCAGGAGAAGATGGAGAGTGACA 367
Db   301 ATAAAAAGAATACAATGTAGACGGCCCAAAAAAAAGGTGTGGAGAGAAGAAGACCGAGAGTAAAC 360
Qy   368 AAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGGAGTGGACACCGGAA 427
Db   361 CAATTCCTAGACTACCTGCAAGAGTTTCTTGGTGTAATGACACACGGAGTGGATAATAGAA 420
Qy   428 AGTTGAGACAAAACCGGCTTATTGTTGTAGTGGAAGAT 462
Db   421 AGTTGAGACTAAACTGGTTTGTTGCAGCCAAAGAT 455

RESULT 4

LOCUS   CD559687   470 bp   mRNA   linear   EST 19-NOV-2003
DEFINITION   AGENCOURT_14497029 NIH_MGC_195 Homo sapiens cDNA clone
             IMAGE:6971771 5', mRNA sequence.
ACCESSION   CD559687
VERSION   CD559687.2 GI:38453484
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
  ORGANISM   Homo sapiens
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 470)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585755.
             Contact: Daniela S. Gerhard, Ph.D.
             Office of Cancer Genomics
             National Cancer Institute / NIH
             Bldg. 31 Rm10A07 Bethesda, MD 20892
             Email: cgapbs-r@mail.nih.gov
             Tissue Procurement: Narayan Bhat
             cDNA Library Preparation: Bhat Laboratory
             cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
             DNA Sequencing by: Agencourt Bioscience Corporation
             Clone distribution: MGC clone distribution information can be
             found through the I.M.A.G.E. Consortium/LLNL at:
             http://image.llnl.gov
             Plate: IRBK1 row: g column: 10
             High quality sequence start: 14
             High quality sequence stop: 470.

FEATURES   Location/Qualifiers
     source   1..470
                     /organism="Homo sapiens"

RESULT 5
CDS59533
LOCUS   CD559533   492 bp   mRNA   linear   EST   26-NOV-2003
DEFINITION   AGENCOURT 14496993 NIH_MGC_195 Homo sapiens cDNA clone
               IMAGE:6971771 5', mRNA sequence.
ACCESSION   CD559533
VERSION   CD559533.2 GI:38558947
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
               Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 492)
AUTHORS   NIH-MGC http://mgc.nci.nih.gov/,
TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585601.
               Contact: Daniela S. Gerhard, Ph.D.
               Office of Cancer Genomics
               National Cancer Institute / NIH
               Bldg. 31 Rm10A07 Bethesda, MD 20892
               Email: cgapb-r@mail.nih.gov
               Tissue Procurement: Narayan Bhat
               cDNA Library Preparation: Bhat Laboratory
               cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
               DNA Sequencing by: Agencourt Bioscience Corporation
               Clone distribution: MGC clone distribution information can be
               found through the I.M.A.G.E. Consortium/LLNL at:
               http://image.llnl.gov
               Plate: IRBK1 row: g column: 10
               High quality sequence start: 14
               High quality sequence stop: 492.
FEATURES   Location/Qualifiers
     source   1..492
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971771"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC 195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presv.dat
                     a Note: this is a NIH_MGC Library."
ORIGIN

Query Match   49.7%; Score 303.4; DB 6; Length 492;
Best Local Similarity   80.5%; Pred. No. 2.2e-74;
Matches 355; Conservative 0; Mismatches 86; Indels 0; Gaps 0;

```
Qy    6  CAAACACTGAACATTTCAGAGACTATGAGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTG  65
         ||||| |||||| |||||||| |||||||  ||||||||||| |||||||||||||||||||
Db  469  CAAACCAGAGAACGTTTCAGAGCCCATGAGGATGCTTCTGCATTTGAGTTTGCTAGCTCTTG  410

Qy   66  GGGGCTGGCCTATGTTTCTGCCTTTGCTGTAGAAAAATCCATTGAATAGACTGGTTGCCGAGAGA  125
         ||||||||||| |||| ||||| |||| | |||||||| |||  |||||||||||||||||||||
Db  409  GAGCTGCCTACGTGTATGCCATCCCACAGAAATTCCCACAAGTGCCATTGGTAGTGAAAGAGA  350

Qy  126  CCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTC  185
         ||||||||||||| ||| ||||| |||||| ||||||| ||||||||||||| |||||||||
Db  349  CCTTGGCCACTGCTTTCTACTCATCCATCGGAACTCTGGCCAATGAGACTCTGAGGGATTC  290

Qy  186  CTACTCCCTGAAAATAAAAAACCACCAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGACA  245
         ||||||||||||||||||||| ||||||||||||  |||||| ||||||||||||||||||||
Db  289  CTGTTCCCTGTACATAAAAAATCACCAACTGTCGCACTGAAGAAATCTTTCAGGGAATAGGCA  230

Qy  246  CATTGAAGAACCAAACTGCCCACGGGGGAGGCGTGTGGATAAACTATTCCAAAACTTGTCTT  305
         |||||||||||||||| ||| ||||||||| ||| ||||| ||||||||||||||||||| |
Db  229  CACTGGAGAGTCAAACTGTCCAAGGGGGGTACTGTGGGAAAGACTATTCAAAAAACTTGTCCT  170

Qy  306  TAATAAAAGAACACATAGAGGCGCCAAAAAAAAGGTGTGCAGAGAGAGATGGAGAGTGA  365
         ||||||||||| |||| |||| |||||||||||| ||||||| ||||| ||||||||||
Db  169  TAATAAGAAATACATTGACGGCCAAAAAAGTGTGGAGAGAGACGGAGAAGACGAGAGTAA  110

Qy  366  CAAAGTTCCTTGACATACCTGCAAAGTTTATTTTCTTGGGTGTAATAAACACCGAGTGGCACCGG  425
         ||||||||||||||||| |||| |||||||||||||||||||||||||||||||||||||||||
Db  109  ACCAATTCCTAGACTACCTGCAAAGAGGTTTCTTGGGTGTAATGAACACCGAGTGGGCAGCA  50

Qy  426  AAAGTTGAGAGAACAAAACCGGGCT  446
         |||||||||||||||||||||||||
Db   49  AAAGTTGAGACTAAAACTGGTT  29
```

ORIGIN

Query Match   49.7%; Score 303.4; DB 6; Length 492;
Best Local Similarity   80.5%; Pred. No. 2.2e-74;
Matches 355; Conservative 0; Mismatches 86; Indels 0; Gaps 0;

```
Qy    6  CAAACACTGAACATTTCAGAGACTATGAGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTG  65
         ||||| |||||| |||||||| |||||||  ||||||||||| |||||||||||||||||||
Db   33  CAAACCAGAGAACGTTTCAGAGCCCATGAGGATGCTTCTGCATTTGAGTTTGCTAGCTCTTG  92

Qy   66  GGGGCTGGCCTATGTTTCTGCCTTTGCTGTAGAAAAATCCATTGAATAGACTGGTTGCCGAGAGA  125
         ||||||||||| |||| |||||| |||| | |||||||| |||  |||||||||||||||||||
Db   93  GAGCTGCCTACGTGTATGCCATCCCACAGAAATTCCCACAAGTGCCATTGGTAGTGAAAGAGA  152

Qy  126  CCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTC  185
         ||||||||||||| ||| ||||| |||||| ||||||| ||||||||||||| |||||||||
Db  153  CCTTGGCCACTGCTTTCTACTCATCCATCGGAACTCTGGCCAATGAGACTCTGAGGGATTC  212

Qy  186  CTACTCCCTGAAAATAAAAAACCACCAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGACA  245
         ||||||||||||||||||||| ||||||||||||  |||||| ||||||||||||||||||||
Db  213  CTGTTCCCTGTACATAAAAAATCACCAACTGTCGCACTGAAGAAATCTTTCAGGGAATAGGCA  272

Qy  246  CATTGAAGAACCAAACTGCCCACGGGGGAGGCGTGTGGATAAACTATTCCAAAACTTGTCTT  305
         |||||||||||||||| ||| ||||||||| ||| ||||| ||||||||||||||||||| |
Db  273  CACTGGAGAGTCAAACTGTCCAAGGGGGGTACTGTGGGAAAGACTATTCAAAAAACTTGTCCT  332
```

```
Qy  306  TAATAAAAGAACACATAGAGCGCCCAAAAAAAAAGGTGTGTGCAGGAGGAAGATGGAGGAGTGA  365
              ||||||| ||||||||| |||||||||||||||||| ||||| |||||||||| | ||||||
Db  333  TAATAAAGAAAATACATTGACGGCGCCAAAAAAAAAAGTGTGGAGAAGAGGAGACGGAGAGTAA  392

Qy  366  CAAAGTTCCTAGACTACCTCCCAAGTATTTCTTGGTCGTAATAAACACCGAGTGGGACACCGG  425
              | |||||||||||||||| ||||| ||||||||||| |||| |||||||||||||||  |
Db  393  ACCAATTCCTAGACTACCTGCCAAGAGTTTCTTGGTGTAATGAACACCGAGTGGGATAATAG  452

Qy  426  AAAGTTGAGACAAACCGGCT  446
              |||||||||| ||| ||||
Db  453  AAAGTTGAGACTAAACTGGTT  473
```

RESULT 6
LOCUS   BC066281   456 bp   mRNA   linear   HTC 12-FEB-2004
DEFINITION   Homo sapiens cDNA clone IMAGE:6971770, containing frame-shift
               errors.
ACCESSION   BC066281
VERSION   BC066281.1 GI:42490969
KEYWORDS   HTC.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
               Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 456)
AUTHORS   Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
               Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
               Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
               Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
               Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
               Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
               Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
               Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
               Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
               McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
               Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
               Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
               Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodrigues,S.,
               Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
               Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
               Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
               Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
               Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
TITLE   Generation and initial analysis of more than 15,000 full-length
               human and mouse cDNA sequences
JOURNAL   Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
PUBMED   12477932
REFERENCE   2 (bases 1 to 456)
AUTHORS   Strausberg,R.
TITLE   Direct Submission
JOURNAL   Submitted (03-FEB-2004) National Institutes of Health, Mammalian
               Gene Collection (MGC), Cancer Genomics Office, National Cancer
               Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
               USA
COMMENT   NIH-MGC Project URL: http://mgc.nci.nih.gov
               Contact: MGC help desk
               Email: cgapbs-r@mail.nih.gov
               Tissue Procurement: Narayan Bhat
               cDNA Library Preparation: Bhat Laboratory
               cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
               DNA Sequencing by: Sequencing Group at the Stanford Human Genome
               Center, Stanford University School of Medicine, Stanford, CA 94305
REMARK   Web site: http://www-shgc.stanford.edu
               Contact: (Dickson, Mark) mcd@paxil.stanford.edu
               Dickson, M., Schmutz, J., Grimwood, J., Rodriguez, A., and Myers,
               R. M.
               Clone distribution: MGC clone distribution information can be found
               through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
               Series: IRAK Plate: 172 Row: a Column: 17
               This clone was selected for full length sequencing because it
               passed the following selection criteria: matched mRNA gi: 28559032

This clone has the following problem: frame shifted.

FEATURES   Location/Qualifiers
     source   1..456
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /clone="IMAGE:6971770"
                     /db_xref="taxon:9606"
                     /tissue_type="PCR rescued clones"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH10B"
                     /note="Vector: pDNR-Dual"

ORIGIN
Query Match   49.3%; Score 301; DB 3; Length 456;
Best Local Similarity 80.1%; Pred. No. 1e-73;
Matches 366; Conservative   0; Mismatches 90; Indels 1; Gaps 1;

Qy 6   CAAACACTGAACACATTTCAGAGCGTATGAGAATGCTTCTGAATTGAGTTTGCTAGCTCTTG 65
              ||||| ||||| |||||||||| |||||| |||| ||| |||| ||||||||||||||||
Db 1   CAAACCGAGAACGTTTCAGAGCGCATGAGGAATGCGTTCTGCATTTGAGTTTGCTAGCTCTTG 60

Qy 66   GGGCTCCCTARGTTTCTGCCTTTGCGTGTAGAAAAATCCCATAAATAGACTGGTGGGCGAGA 125
              | ||| |||| ||| ||| | |||| | || |||||||||| ||||| ||||| |||
Db 61   GAGCTCGCCTACGTGTAGCCAATCCCCACAGAGAAATTCCCACAACAGTGCATTGGTGAAAGGA 120

Qy 126 CCTTGACACTGCGTCTCCACTCCATCGAACTTGGGCTATAGGCGGAACCTGAATGATTC 185
              ||||| ||||||||| || ||||||||||| | | |||| |||| ||| |||||||
Db 121 CCTTGGCACTGCGTTCTACTCATCGAACTCTGCGTGATAGCCAATGAGACTCTGAGGATTC 180

Qy 186 CTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACA 245
              || | ||||| ||||||||||||||||||||| | ||||| |||||| |||||| ||
Db 181 CTGTTCCTGTACATAAAAATCACCAACTGTGCCACTGAAGAAAATCTTCAGGGAAATAGGCA 240

Qy 246 CATTGAAGAACCAAAACTGCCCACACGGCGAGGCGTGGATAAATAACTATTCCAAAAACTTGTCTT 305
              || | || ||||||||| ||| | || || ||||||| |||||||||| |||||||||| |
Db 241 CACTCGGAGAGTCAAAACTGTGCAAGGGGGTACTGTGGAAAAGACTATTCAAAAAACTTGTCGT 300

Qy 306 TAATAAAAGAACACATAGAGCGCCCAAAAAAAAAGGTGTGTGCAGGAGGAAGATGGAGGAGTGA 365
              ||||||| ||||||||| |||||||||||||||||| ||||| |||||||||| | ||||||
Db 301 TAATAAAGAAAATACATTGACGGCGCCAAAAAAAAAAGTGTGGAGAAGAGGAGACGGAGAGTAA 359

Qy 366 CAAAGTTCCTAGACTACCTCCCAAGTATTTCTTGGTGGTAATAAACACCGAGTGGGACACCGG 425
              | |||||||||||||||| ||||| ||||||||||| |||| ||||||||||||||| |
Db 360 ACCAATTCCTAGACTACCTGCCAAGAGTTTCTTGGTGTAATGAACACCGAGTGGGATAATAG 419

Qy 426 AAAGTTGAGACAAACCGGCTTATTTGTTAGGTGGAAAGAT 462
              |||||||||| ||| |||| | ||||| |||| ||||||
Db 420 AAAGTTGAGACTAAACTGGTTTGTTGCAGCCAAAAGAT 456

RESULT 7
CD559534
CD559534
LOCUS   CD559534   478 bp   mRNA   linear   EST 26-NOV-2003
DEFINITION   AGENCOURT_14496928 NIH_MGC_195 Homo sapiens cDNA clone
               IMAGE:6971770 5', mRNA sequence.
ACCESSION   CD559534
VERSION   CD559534.2 GI:38558949
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
               Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 478)
AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585602.
               Contact: Daniela S. Gerhard, Ph.D.
               Office of Cancer Genomics
               National Cancer Institute / NIH
               Bldg. 31 Rm10A07 Bethesda, MD 20892
               Email: cgapbs-r@mail.nih.gov
               Tissue Procurement: Narayan Bhat
```

cDNA Library Preparation: Bhat Laboratory
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Agencourt Bioscience Corporation
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: IRBKl row: g column: 09
High quality sequence start: 3
High quality sequence stop: 478.

FEATURES
source          1..478
                /organism="Homo sapiens"
                /mol_type="mRNA"
                /db_xref="taxon:9606"
                /clone="IMAGE:6971770"
                /tissue_type="mixed"
                /lab_host="DH5A (T1 phage-resistant)"
                /clone_lib="NIH_MGC_195"
                /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                loxP-HindIII; Clones from this library have been
                PCR-amplified using gene-specific primers to contain the
                complete open reading frame (based on known gene sequences
                available from NCBI's RefSeq). Template for PCR is cDNA
                derived from either pooled cytoplasmic polyA RNA from 30
                cells lines or pooled total RNA from 10 different tissues
                (from BD Biosciences/Clontech and Washington University).
                PCR products are directionally cloned into the loxP sites
                of the pDNR-Dual vector. Library constructed by Dr.
                Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                Expression Laboratory, Research Technology Program, SAIC
                Frederick, NCI-Frederick, Frederick, MD 21702). For
                information on which gene each clone represents, please
                visit our anonymous ftp site at
                ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSV.dat
                a Note: this is a NIH_MGC Library."

ORIGIN

Query Match      49.3%;  Score 301;  DB 6;  Length 478;
Best Local Similarity  80.1%;  Pred. No. 1e-73;
Matches 366;  Conservative 0;  Mismatches 90;  Indels 1;  Gaps 1;

```
Qy    6 CAAACACTGAACATTTCAGAGCTATGAGAATGCCTTCTGAATTTGAGTTTGCTACGTCTTG 65
         |||| | ||||| ||||||||| |||||| ||||||||| ||||||||||||| |||||||
Db   22 CAAACGCAGAACGTTTCAGAGCCATGAGGATGCCTTCTGCATTTGAGTTTGCTAGGTCTTG 81

Qy   66 GGGGCTGCCTATGTTTCTGCCTTTGGTGTAATAGACTGGGTGGGCAGAGA 125
         | |||||||| || | | ||| |||| | || |||||  |  | |||||||
Db   82 GAGCTGCCTACGTGTATGCCATCCCACAGAAATCCCACAAGTGCCATTGGTGTGAAGAGA 141

Qy  126 CCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTC 185
         ||||| |||||||  | ||||||||||||  |||||||||| | || | ||||| ||||||
Db  142 CCTTGGCACTGCTTTCTACTCATCGAACTCGCTGATAGGCCAATGAGACTCTGAGGATTC 201

Qy  186 CTACTCCTCGAAAAAAAATCACCAAACTTGCATTAAAAGAAAGTTTTTCAGGGTATAGACA 245
         || | ||| | | |||||||||||||| ||  |  | |||||| ||||||||| ||||| ||
Db  202 CTGTTCCTGTACATAAAAATCACCAAACTGTGCACTGAAGAAATCTTTCAGGGAATAGGCA 261

Qy  246 CATTGAAGAAGAACCAAAACTGCCCACACGGGGAGGACGCTGTGGAATAAACTATTCAAAAACTTGTCTT 305
         || ||  | ||  | |||||||| | | | || | || ||  || || ||||| |||||||||||||||| ||
Db  262 CACTGGAGAGTCAAAACTGTCGTGGAAAGAGACTATTCAAAAAACTTGTCCT 321

Qy  306 TAATAAAAGAACACATAGAGCGCCAAAAAAAAAGGTGTGCGAGGAGAAGATGGAGAGTGA 365
         ||||||| ||| ||||| ||| ||||||||||| |||||  || ||||||| ||||||| ||
Db  322 TAATAAAGAAATACATTGACGGCCCAAAAAAAAA-GTGTGGAGAAGAAGACGGAGAGTAA 380

Qy  366 CAAAGTTCCTAGACTACCGCGAGTTATTTCTTGGTGTAATAAACACACCAGTGACACCCG 425
         | ||| |||||||||| | |  |||| |||||||||||| |||||| | |||||   | |
Db  381 ACCAATTCCTAGACTACACCTGCCAAGAGTTTCTTGGTGTAATGAACACCGAGTGGATAATAG 440

Qy  426 AAAGTTGAGACAAAACCGGCGTTATTGTAGTGGGAAGAT 462
         |||||||||| ||||| | | |||| || | | |||||||
Db  441 AAAGTTGAGACTAAACTGTGTTTGTTGTCACGCCAAAGAT 477
```

RESULT 8

LOCUS   CD559535   463 bp   mRNA   linear   EST 26-NOV-2003
DEFINITION AGENCOURT_14496865 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971769 5', mRNA sequence.
ACCESSION   CD559535
VERSION   CD559535.2 GI:38558950
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
  ORGANISM Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 463)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/,
  TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585603.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapb-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBKl row: g column: 08
            High quality sequence stop: 463.

FEATURES
source   1..463
                /organism="Homo sapiens"
                /mol_type="mRNA"
                /db_xref="taxon:9606"
                /clone="IMAGE:6971769"
                /tissue_type="mixed"
                /lab_host="DH5A (T1 phage-resistant)"
                /clone_lib="NIH_MGC_195"
                /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                loxP-HindIII; Clones from this library have been
                PCR-amplified using gene-specific primers to contain the
                complete open reading frame (based on known gene sequences
                available from NCBI's RefSeq). Template for PCR is cDNA
                derived from either pooled cytoplasmic polyA RNA from 30
                cells lines or pooled total RNA from 10 different tissues
                (from BD Biosciences/Clontech and Washington University).
                PCR products are directionally cloned into the loxP sites
                of the pDNR-Dual vector. Library constructed by Dr.
                Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                Expression Laboratory, Research Technology Program, SAIC
                Frederick, NCI-Frederick, Frederick, MD 21702). For
                information on which gene each clone represents, please
                visit our anonymous ftp site at
                ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSV.dat
                a Note: this is a NIH_MGC Library."

ORIGIN

Query Match   49.3%; Score 300.8; DB 6; Length 463;
Best Local Similarity 79.8%; Pred. No. 1.2e-73;
Matches 367; Conservative 0; Mismatches 92; Indels 1; Gaps 1;

```
Qy    4 GGCAAACACTGAACATTTCAGAGCTATGAGAATGCCTTCTGAATTTGAGTTTGCTACGTCT 63
         | ||||| | ||||| ||||||||| |||||| ||||||||| |||||||||||| ||||||
Db    3 GACAAACGCAGAACGTTTCAGAGCCATGAGGATGCCTTCTGCATTTGAGTTTGCTAGGTCT 62

Qy   64 TGGGGGCTGCCTATGTTTCTGCCTTTGGTGTGTAATAGACTGGGTGGGCAGA 123
         ||| |||||||| || | | ||| |||| | | ||| |  | |  | ||||||
Db   63 TGGAGCTGCCTACGTGTATGCCATCCCACAGAAATCCCACAAGTGCCATTGGTGTGAAAGA 122

Qy  124 GACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGAACCTGATGAT 183
```

RESULT 9

BC066279
LOCUS   BC066279   458 bp   mRNA   linear   HTC 12-FEB-2004
DEFINITION Homo sapiens cDNA clone IMAGE:6971768, containing frame-shift
            errors.
ACCESSION   BC066279
VERSION   BC066279.1   GI:42490901
KEYWORDS   HTC.
SOURCE   Homo sapiens (human)
  ORGANISM Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 458)
  AUTHORS   Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
            Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
            Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
            Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
            Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
            Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
            Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
            Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
            Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
            McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
            Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
            Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
            Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodrigues,S.,
            Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
            Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
            Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
            Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
            Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
  TITLE   Generation and initial analysis of more than 15,000 full-length
            human and mouse cDNA sequences
  JOURNAL   Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
   PUBMED   12477932
REFERENCE   2 (bases 1 to 458)
  AUTHORS   Strausberg,R.
  TITLE   Direct Submission
  JOURNAL   Submitted (03-FEB-2004) National Institutes of Health, Mammalian
            Gene Collection (MGC), Cancer Genomics Office, National Cancer
            Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
            USA
REMARK   NIH-MGC Project URL: http://mgc.nci.nih.gov
COMMENT   Contact: MGC help desk
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Sequencing Group at the Stanford Human Genome
            Center, Stanford University School of Medicine, Stanford, CA 94305
            Web site: http://www-shgc.stanford.edu
            Contact: (Dickson, Mark) mcd@paxil.stanford.edu
            Dickson, M., Schmutz, J., Grimwood, J., Rodriguez, A., and Myers,
            R. M.

            Clone distribution: MGC clone distribution information can be found
            through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
            Series: IRAK Plate: 172 Row: a Column: 15
            This clone was selected for full length sequencing because it
            passed the following selection criteria: matched mRNA gi: 28559032
            This clone has the following problem: frame shifted.
FEATURES   Location/Qualifiers
     source   1..458
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971768"
                     /tissue_type="PCR rescued clones"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH10B"
                     /note="Vector: pDNR-Dual"
ORIGIN

Query Match   49.2%;   Score 300.4; DB 3; Length 458;
Best Local Similarity   79.9%;   Pred. No. 1.5e-73;
Matches 366; Conservative   0; Mismatches   91; Indels   1; Gaps   1;

Qy   6 CAAACACTGAACAATTTCAGGAGGCTATGAGGAAATGCTTCTCGAAATTTGAGTTTGCTAGCTCTTG 65
            |||||| |||| |||||||||||| || ||||||||||| ||||||||||||||||||||||||||
Db   1 CAAACGCAGAACGTTTCAGGAGGCCATGAGGATCCTTCTCGAAATTTGAGTTTGCTAGCTCTTG 60

Qy   66 GGGCTGCCTATGTTTCTGCCCTTGCTGTAGAAAATCCCATAGAAGTGGTGGCCAGAGAGAGAGA 125
            |||| || ||||||||||||| |||||||||||||||| ||||||||||||||||||||||||
Db   61 GAGCTGCCTACGTGTATGCCATCCCACAGAAAATTCCCACAAGTGCATTGGTGGTGAAAGAGA 120

Qy   126 CCTTGACACTGCTCTCCACTCATCGAACTTGCTGCTGATAGGCGATGGGGAAACCGATGATTC 185
            ||||||| ||||| |||| ||||| || || |||| ||||||||||||||||| |||||||||
Db   121 CCTTGGCACTGCTTTCTACTCATCGAACTCTGCTGATAGCCAATGAGACTCGAGGATTC 180

Qy   186 CTACTCCTGAAAATAAAAAAATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACA 245
            ||| ||||||||||||||||||||||| || |||||||||||||||||||||||||||||
Db   181 CTGTTCCTGTACATAAAAAAATCACCAACTGTGCACTGAAGAAGAAATCTTTCAGGGGAATAGGCA 240

Qy   246 CATTGAAGAACCAAAACTGCCCACAGGGGAGGGCTGTGGATAAACTATTCCAAAACTTGTCTT 305
            ||||||||||||||||||| ||| |||||||| ||||||||||| ||||||||||||||||
Db   241 CACTGGAGAGTCAAAACTGTGCAAGGGGGGTACTCTGGAAAGACTATTCAAAAACTTGTCCT 300

Qy   306 TAATAAAAGAACACACATAGGAGCGCCC-AAAAAAAAAAGGTGTGCAGGAGAAAGATGGAAGT 364
            ||||||||||||||||||||| || ||| |||||||||||||||||||||||| |||||||
Db   301 TAATAAGAAAATACATTGACCGGCCAAAAAAAAAAGTGTGGACAAGAGAGACCGAGAGTA 360

Qy   365 ACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCG 424
            ||||||||||| |||||||||||||||||||||||||||||| |||||||||||||
Db   361 AACCAATTCCTAGACTACCTGCAAGAGTTTCTTGGTGTAATGAACACCGAGTGGGGATAATA 420

Qy   425 GAAAGTTGAGACAAAACCGGCCTTATTGTGAGTGGAAGAT 462
            |||||||||| ||||||||| ||||||| ||||| |||||
Db   421 GAAAGTTGAGACTAAACTGGTTTGTTGCAGCCAAAGAT 458

RESULT 10

BC066280
LOCUS   BC066280   458 bp   mRNA   linear   HTC 12-FEB-2004
DEFINITION Homo sapiens cDNA clone IMAGE:6971769, containing frame-shift
            errors.
ACCESSION   BC066280
VERSION   BC066280.1   GI:42490838
KEYWORDS   HTC.
SOURCE   Homo sapiens (human)
  ORGANISM Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

```
REFERENCE   1  (bases 1 to 458)
AUTHORS     Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
            Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
            Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
            Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
            Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
            Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
            Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
            Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
            Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
            McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
            Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
            Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
            Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodrigues,S.,
            Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
            Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
            Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
            Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
            Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
TITLE       Generation and initial analysis of more than 15,000 full-length
            human and mouse cDNA sequences
JOURNAL     Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
PUBMED      12477932
REFERENCE   2  (bases 1 to 458)
AUTHORS     Strausberg,R.
TITLE       Direct Submission
JOURNAL     Submitted (03-FEB-2004) National Institutes of Health, Mammalian
            Gene Collection (MGC), Cancer Genomics Office, National Cancer
            Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
            USA
COMMENT     NIH-MGC Project URL: http://mgc.nci.nih.gov
            Contact: MGC help desk
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Sequencing Group at the Stanford Human Genome
            Center, Stanford University School of Medicine, Stanford, CA 94305
            Web site: http://www-shgc.stanford.edu
            Contact: (Dickson, Mark) mcd@paxil.stanford.edu
            Dickson, M., Schmutz, J., Grimwood, J., Rodriguez, A., and Myers,
            R. M.
            Clone distribution: MGC clone distribution information can be found
            through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
            Series: IRAK Plate: 172 Row: a Column: 16
            This clone was selected for full length sequencing because it
            passed the following selection criteria: matched mRNA gi: 28559032
            This clone has the following problem: frame shifted.
REMARK      
FEATURES             Location/Qualifiers
     source          1..458
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971769"
                     /tissue_type="PCR rescued clones"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH10B"
                     /note="Vector: pDNR-Dual"
ORIGIN
Query Match  49.2%;  Score 300.4;  DB 3;  Length 458;
Best Local Similarity  79.9%;  Pred. No. 1.5e-73;
Matches 366;  Conservative  0;  Mismatches 91;  Indels  1;  Gaps  1;

Qy   6  CAAACACTGAACATTCAGAGGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTG   65
           |||||| ||||||||||||||||||||||||||||||||||||||| |||||||||||
Db   1  CAAAACCGAGAACGTTTCAGAGCCATGAGGAATGGCTTCTGCATTTGAGTTTGCTAGCTCTTG   60

Qy  66  GGGCTGCCTATGTTTCTGCCCTTTGCTGTGAGAAAATCCCATGAAATAGGGTGGCCAGA   125
          ||||||| ||||||||||||| | |||||| |||| |||| ||||||| |||||||||
Db  61  GAGCTGCCTAGCGTGTATGCCATCCCCACAGAGAAATTCCCACAAGTGCATTGGTGAAAGAGA   120
```

(Continued on right portion / RESULT 11)

```
RESULT 11
CD559536
LOCUS       CD559536                 489 bp    mRNA     linear     EST  26-NOV-2003
DEFINITION  AGENCOURT_14496804 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971768 5', mRNA sequence.
ACCESSION   CD559536
VERSION     CD559536.2  GI:38558953
KEYWORDS    EST.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 489)
AUTHORS     NIH-MGC http://mgc.nci.nih.gov/.
            National Institutes of Health, Mammalian Gene Collection (MGC)
TITLE       
JOURNAL     Unpublished (1999)
COMMENT     On Jun 10, 2003 this sequence version replaced gi:31585604.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBK1 row: g column: 07
            High quality sequence start: 17
            High quality sequence stop: 489.
FEATURES             Location/Qualifiers
     source          1..489
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971768"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
```

```
Qy  126  CCTTGACACTGCTCTCCACTCACTCATCGAACTTGGCTATAGGCGGATGGGAACCTGATCGGATGATCATGATGATTC  185
              ||||||||| |||||||||||||||||||||||||||||||||||||||||||||||||||| |||| |||
Db  121  CCTTGGCACTGCTTTCTACTCATCATCGAACTCTCGATAGCCTGATAGCCAATGAGACTCTCAGGATTC   180

Qy  186  CTACTCCTTGAAAATAAAAATCACCAACTGTCATTAAAGAAGTTTTTCAGGTATAGACA   245
            ||||  |||||||| ||||||||||||||||||||||   ||| ||||||||||||
Db  181  CTGTTCCTGTACATAAAAAAATCACCAACTGTCACTGAAAGAAATCTTCAGGGAATAGGCA   240

Qy  246  CATTGAAGAAGACCAAACTGCCCACAGGAGGAGGCGTGTGGATAAACTATTCCAAAACTTGTCTT   305
            |||||| |||||| |||||||||||||||||||||||| |||| |||||||||| ||||
Db  241  CACTGAGAGTCAAACTGTGCAAGAGCGGTACTGTGCAAAAGACTATTCCAAAACTTGTCCT   300

Qy  306  TAATAAAAGAACACATAGAGCGGCC-AAAAAAAGGTGTGCCAGAAGAGATGGACACCG  364
            |||||||||||| ||||||||||| |||||||||||||||||||||||||||||||| |
Db  301  TAATAAAAGAATACATTGACGGGCCAAAAAAAAGTGTGGAGAAGAGAAGACGGGAGAGTA  360

Qy  365  ACAAAGTTCCTTAGACTACCTGCCAAGTATATTCTTGGTGTAATAAACACCGAGTGGACACCG   424
            ||||||||| |||| ||||| ||| |||||| ||||||||||||  || |||| ||||||
Db  361  AACCAATTCCTAGACTACCTCCGAAGAGTTTCTTGGGTGTAATGAACACCGAGTGGGATAATA   420

Qy  425  GAAAGTTGAACACAAAACCGGCTTATTGTAGTGGAAGAT  462
            |||||||||||| ||||||||||||||||||||||| ||
Db  421  GAAAGTTGAGACTAAAACTGGTTGTTTGTTGCAGCCAAAGAT   458
```

RESULT 12

CD559688/c

LOCUS   CD559688   467 bp   mRNA   linear   EST   19-NOV-2003
DEFINITION   AGENCOURT_14496964 NIH_MGC_195 Homo sapiens cDNA clone
             IMAGE:6971770 5', mRNA sequence.
ACCESSION   CD559688
VERSION   CD559688.2 GI:38453486
KEYWORDS   EST.
SOURCE   Homo sapiens
  ORGANISM   Homo sapiens
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 467)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585756.
             Contact: Daniela S. Gerhard, Ph.D.
             Office of Cancer Genomics
             National Cancer Institute / NIH
             Bldg. 31 Rm10A07 Bethesda, MD 20892
             Email: cgapbs-r@mail.nih.gov
             Tissue Procurement: Narayan Bhat
             cDNA Library Preparation: Bhat Laboratory

             cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
             DNA Sequencing by: Agencourt Bioscience Corporation
             Clone distribution: MGC clone distribution information can be
             found through the I.M.A.G.E. Consortium/LLNL at:
             http://image.llnl.gov
             Plate: IRBKI row: g column: 09
             High quality sequence start: 11
             High quality sequence stop: 467.
FEATURES   Location/Qualifiers
     source   1..467
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971770"
                     /tissue_type="mixed"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presV.dat
                     a Note: this is a NIH_MGC Library."
ORIGIN

Query Match   48.0%; Score 293; DB 6; Length 467;
Best Local Similarity   80.5%; Pred. No. 1.9e-71;
Matches 355; Conservative 0; Mismatches 85; Indels 1; Gaps 1;

Qy   6 CAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGAGTTTGCTAGCTCTTG 65
            ||||||||||||||||||||||||||||||| |||||||||||| ||| ||||||||||||||||
Db   466 CAAACCGCAGAACGTTTCAGAGCCATGAGAGCGATGCTTCTGCATTTGAGTTTGCTAGCTCTTG 407

Qy   66 GGGCTGCCTATGTTTCTGCCTTTGCTCTAGAAAAATCCATGAATAGACTTGGTCAGCAGA 125
            ||||||||||| | || || ||||| ||||| ||||| || |||| |||||||||||
Db   406 GAGCTGCCTACGTTGTATGCCATCCCCACAGAAATTCCCACAAGTGCATTGGTCAGCAGA 347

Qy   126 CCTTGACACTGCTCTCCACTCATCATCGAACTTGGCTGATCGATTAGGCCATGAGGAACCTGATGATTC 185
            ||||||||| ||| ||||||||| | ||||| || |||| || |||||||| |||| ||||||
Db   346 CCTTGGCACTGCTTTTCTACTCATCGAACTCTCCTGATAGCCAATGAGACTCTGAGGATTC 287

Qy   186 CTACCTCCTGAAAAATAAAAATACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTTATAGACA 245
            ||||||| ||||| ||||||| |||||||||||||| |||||| |||||| ||||||||||||
Db   286 CTGTTCCTGTACATTAAAAATCACCAACTGTGCAATGAAATCTTTTTCAGGGTAATAGCCA 227

Qy   246 CATTGAAGAACCAAAACTGCCCACGGGGAGGCTGTTAGTAGTGGAAGAT 305
            || |||||||||||||| ||| |||||| ||||||| || |||||||||
Db   226 CACTGGAGAGTCAAAACTGTGGAAAGGGGTACTGTGGAAAGGGGTACTGTGGAAAGACTTGTCTT 167

Qy   306 TAATAAAAAGAACACATAGAGCGGCCCAAAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGTGA 365
            ||||||||||| ||| ||||||||||||||||||||||||||||| |||||||||||||| ||||
Db   166 TAATAAAGAAATACATTGACGGCCAAAAAAAAA-GTCTGGACAGAGAAAGACGGAGAGTAA 108

Qy   366 CAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAAACACCGGACACCGG 425
            | |||||||||| ||| || ||||||||||| |||| |||| ||||||||||| |||
Db   107 ACCAATTCCTAGACTACCTGCAAGAGTTTCTTGGTGTAATGAAACACCGGGATAATAG 48

Qy   426 AAAGTTGAGAACAAACCGGCT 446
            |||||||||| |||| |||||
Db   47 AAAGTTGAGACTAAACTGGTT 27

ORIGIN

(from BD Biosciences/Clontech and Washington University).
PCR products are directionally cloned into the loxP sites
of the pDNR-Dual vector. Library constructed by Dr.
Narayan Bhat, Earl Bere III and Hongling Liao (Gene
Expression Laboratory, Research Technology Program, SAIC
Frederick, NCI-Frederick, Frederick, MD 21702). For
information on which gene each clone represents, please
visit our anonymous ftp site at
ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presV.dat
a Note: this is a NIH_MGC Library."

Query Match   49.0%; Score 299.2; DB 6; Length 489;
Best Local Similarity   79.6%; Pred. No. 3.4e-73;
Matches 366; Conservative 0; Mismatches 93; Indels 1; Gaps 1;

Qy   4 GGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCT 63
            ||||||||||||||||||||||||||||||||| | ||||||||||||||||| ||||||
Db   29 GACCAACGAGAAACGTTTCAGAGCCATGAGGATGCTTCTGCATTTGAGTTTGCTAGCTCT 88

Qy   64 TGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAAATCCATGAATAGACTGGTCAGCAGA 123
            |||||||||||| | ||||| | ||||| ||||| |||||| ||| ||| ||||||||||
Db   89 TGGGACCTGCCTACGTGTATGCCATCCCCACAGAAATTCCACAAGTGCATTGGTGAAAGA 148

Qy   124 GACCTTGACACTGCTCTCCACTCATCGATCGAACTTGGCTGATGAGCCATGAGGAACCTGATGAT 183
            |||||||| |||||| | ||||||| | ||||| || || | || |||||||| ||||||
Db   149 GACCTTGGCACTGCTTTTCTACTCATCGAACTCTCGCTGATAGCCAATGAGACTCTGAGGAT 208

Qy   184 TCCTACTCCTGAAAATAAAAATACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGA 243
            ||||||| ||||| ||||||| ||||||||||||| |||||| ||||||| |||||||||
Db   209 TCCTGTTCCTGTACATTAAAAATCACCAACTGTGCAATGAAATCTTTTTCAGGGAATAGG 268

Qy   244 CACATTGAAGAACCAAAACTGCCCACGGGGAGGCTGTTGGATAAAACTATTCCAAAACTGTC 303
            || ||||||||||||||||||| |||||| ||||||| |||| ||| ||| || ||||||||
Db   269 CACACTGGAGAGTCAAAACTGTGGAAAGGGGTACTGTGGAAAGACTATTCAAAAACTTGTC 328

Qy   304 TTTAATAAAAAGAACACACATAGAGCGGCC-AAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAG 362
            |||||||||| ||| ||| ||||||||||| ||||||||||||||| ||||||||||||||
Db   329 CTTAATAAAGAAATACATTGACGGCCAAAAAAAAGTGGGAGAGAAAGACGGAGAGTAG 388

Qy   363 TGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAAACACCGGACAC 422
            |||| |||||||||| ||| || ||||||||||| |||| |||| ||||||||| ||
Db   389 TAAACCAATTCCTAGACTACCTGCAAGAGTTTCTTGGTGTAATGAAACACCGAGTGGATAA 448

Qy   423 CGGAAAGTTGAGAACAAACCGGCTTATTGTAGTGGAAGAT 462
            |||||||||||| ||||| ||||| |||| || |||||||
Db   449 TAGAAAGTTGAGACTAAACTGGTTCGTTGCGAGCCAAAGAT 488

RESULT 13
CD559689/c
LOCUS   CD559689   473 bp   mRNA   linear   EST 19-NOV-2003
DEFINITION AGENCOURT_14496901 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971769 5', mRNA sequence.
ACCESSION   CD559689
VERSION   CD559689.2 GI:38453487
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 473)
AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585757.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBK1 row: g column: 08
            High quality sequence start: 16
            High quality sequence stop: 473.
FEATURES   Location/Qualifiers
     source   1..473
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971769"
                     /tissue_type="mixed"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presV.dat
                     a Note: this is a NIH_MGC Library."

ORIGIN

Query Match   47.9%; Score 292.4; DB 6; Length 473;
Best Local Similarity   80.3%; Pred. No. 2.8e-71;
Matches 355; Conservative   0; Mismatches 86; Indels 1; Gaps 1;

Qy   6 CAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTGACTTTCTAGCTTCTTG 65
          |||| ||||| ||| ||||||||| | ||||||||||| || ||||| |||||||
Db   472 CAAACGCGAGAACGTTTCAGAGCCATGAGAATGCTTCTGCATTGAGTTTGCTAGCTCTTG 413

Qy   66 GGGGCTGCCTATGTTTCTGCCTTTGCTGTGTAGAAAAATCCCATGAATAGACTCGGTCGCAGAGA 125
          ||| | || ||||||| | ||| ||||||||||||||| || |||| ||||| |||||||||
Db   412 GAGCTGCCTACGTGTATGCCATCCCACAGAAATTCCCACAAGTGCATTGGTGAAAGAGA 353

Qy   126 CCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTC 185
          ||||||||| |||| || ||||| ||||| ||||||||| |||||||| |||||| |||
Db   126 CCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTC 185

RESULT 14
CD559690/c
LOCUS   CD559690   467 bp   mRNA   linear   EST 19-NOV-2003
DEFINITION AGENCOURT_14496838 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971768 5', mRNA sequence.
ACCESSION   CD559690
VERSION   CD559690.2 GI:38453490
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 467)
AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585758.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBK1 row: g column: 07
            High quality sequence stop: 467.
FEATURES   Location/Qualifiers
     source   1..467
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971768"
                     /tissue_type="mixed"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites

Db   352 CCTTGGCACTGCTTTCTTACTTCATCGAACTCTGCTGATAGCCGATTAAAGAGACTCTGAGGATTC 293
          |||||| ||||||||| | |||||| |||| ||||||| ||| ||||| ||| ||| |||
Db   186 CTACTCCTGAAAATAAAAATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACA 245
Db   292 CTGTTCCTGTAACATAAAAATCACCAACTGTGCACTGAAAGAAAATCTTTCAGGGAATAGGCA 233
Db   246 CATTGAAGAACCAAACTGCCCACGGGGAGGGGCTGTGGTGATAAACTATTCCAAAACTTGTCTT 305
Db   232 CACTGGAGGAGTCAAACCTGTGCAAGGGGGTACTGTGGAAAGAGACTATTCAAAAACTTGTCCT 173
Qy   306 TAATAAAAGAACACATAGACGCGCC-AAAAAAAAAGGTGTCAGGGAGGAGAGATGGGAGAGTG 364
          ||||||||||||||||| |||||| ||||||||| ||||||||||||||||||||||||||||
Db   172 TAATAAAGAAATACATTGACGGCCAAAAAAAAACTGTGGAGAGAGGAAAAAAAAACTTGTCCT 113
Qy   365 ACAAAGTTCCTTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGTGGTGGCACCG 424
          ||||||||||||||||| |||||| |||||||||||||||||||||||||||||||||||||
Db   112 AACCAAATTCCTAGACTACCTGCAAGAGTTTCTTGGTGTAATGAACACCGAGTGTGGTGGATAATA 53
Qy   425 GAAAGTTGAGAACACAAACCGGCGT 446
          |||||||||||||| |||||||||
Db   52 GAAAGTTGAGACTAAAACTGGTT 31

RESULT 15
LOCUS   AY412020   405 bp   DNA   linear   GSS 16-DEC-2003
DEFINITION Homo sapiens IL5 gene, VIRTUAL TRANSCRIPT, partial sequence,
            genomic survey sequence.
ACCESSION   AY412020
VERSION   AY412020.1 GI:39767985
KEYWORDS   GSS.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 405)
AUTHORS   Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
            Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
            Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
            Adams,M.D. and Cargill,M.
TITLE   Inferring nonneutral evolution from human-chimp-mouse orthologous
            gene trios
JOURNAL   Science 302 (5652), 1960-1963 (2003)
PUBMED   14671302
REFERENCE   2 (bases 1 to 405)
AUTHORS   Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
            Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
            Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
            Adams,M.D. and Cargill,M.
TITLE   Direct Submission
JOURNAL   Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive,
            Rockville, MD 20850, USA
COMMENT   This sequence was made by sequencing genomic exons and ordering
            them based on alignment.
FEATURES   Location/Qualifiers
     source   1..405
                     /organism="Homo sapiens"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9606"
     gene   <1..>405
                     /gene="IL5"
                     /locus_tag="HCM4418"

ORIGIN

Query Match   45.9%; Score 280.2; DB 9; Length 405;
Best Local Similarity   80.7%; Pred. No. 7.4e-68; Indels 0; Gaps 0;
Matches 327; Conservative 0; .Mismatches 78;

Qy   29 ATGAGAAATGCTTCTGAATTTGAGTTTGAGTTTGGTCTAGCTCTTGGGGGCTGCCTATGTTTTCTGCCTTT 88
              |||||||||||||||||||||||| ||||| ||||||||||||||||| |||||||||||||||||||||||
Db   1 ATGAGAGATGCTTCTGCATTTGAGTTTGCTAGCTCTTGGAGCTGCCTACGTGTGTATGCCATC 60

Qy   89 GCTGTAGAAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 148
              |||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CCCACAGAAAATCCCACAAGTGCATTGGTGTGAAAGAGACCTTGGCACTGCTTTCTACTCAT 120

Qy   149 CGAACTTGGCGTGATAGGCGATGGGGACCTGATGATTCCTGAAAAATAAAAAATCAC 208
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CGAACTGCTGACTAGCCAATGAGGACTTCTGAGGATTCCTGTACATAAAAATCAC 180

Qy   209 CAACTGTGCACTGAAAGAAGTTTTTCAGGGTATAGACATTGAAGAACCAAACTGCCCAC 268
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CAACTGTGCACTGAAAGAATCTTTCAGGGAATAGGCCACACTCAAACTGTGCAA 240

Qy   269 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGGGC 328
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 GGGGGTACTGTGGAAAGAACTATTCCATAAAGAATACAAGTTCCTAGAGTACCCTCCA 300

Qy   329 CAAAAAAAAAAGGTGTCCAGGAGGAAAAGATGAGAGTGAAAGTTGTCCTTAATAAAGAACACATAGAGGGC 388
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAAAAAAAAAGGTGGAGAGAAGAACGAGAGTAAAACCAATTCCTAGACTACCTGCAA 360

Qy   389 GTATTTCTTGGTGTAATAAACACCCGAGTGGGACCCGAGAAAGTTGA 433
              |||||||||||||||||||||||||||||||||||||||||||||||
Db   361 GAGTTTCTTGGTGTAATGAACACCGAGTGGGATAATAGAAAGTTGA 405

Search completed: August 8, 2005, 08:46:05
Job time : 2602.79 secs

ORIGIN
                of the pDNR-Dual vector Library constructed by Dr.
                Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                Expression Laboratory; Research Technology Program, SAIC
                Frederick, NCI-Frederick, Frederick, MD 21702). For
                information on which gene each clone represents, please
                visit our anonymous ftp site at
                ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presV.dat
                a Note: this is a NIH_MGC Library."

Query Match   47.9%; Score 292.2; DB 6; Length 467;
Best Local Similarity   80.0%; Pred. No. 3.1e-71; Indels 1; Gaps 1;
Matches 356; Conservative 0; Mismatches 88; Indels 1; Gaps 1;

Qy   6 CAAACACTGAAACATTTCAGAGAGCTATGAGAATAGCTTCTGAATTTGAGTTTGCTAGTCTTG 65
              ||||| |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   466 CAAACGCAGAAGTTTCAGAGCCATGAGGATGCTTCTGCATTTGAGTTTGCTAGCTCTTG 407

Qy   66 GGGGCTGCCTATGTTTTCTGCCTTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGGCAGAGA 125
              |||||||||||||||||||||||| ||||| ||||||||||||||||||||||||||||||||||
Db   406 GAGCTGCCTACGTGTATGCCATCCCCACAGAAAATCCCACAAGTGCATTGGTGTGAAAGAGAGA 347

Qy   126 CCTTGACACTGCTCTCCACTCATCGAACTTGGCGTGATAGGCGATGGGGACCTGATGATTC 185
              ||||||||||||||||||||||||||||| ||||||||||||||||||||||||||||||||
Db   346 CCTTGGCACTGCTTTCTACTCATCGAACTGCTGACTAGCCAATGAGGACTTTGAGGATTC 287

Qy   186 CTACTCCTGAAAATAAAAAATCACCAACTGTGCACTGAAAGAAGTTTTTCAGGGTATAGACA 245
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   286 CTGTTCCTGTACATAAAAAATCACCAACTGTGCACTGAAAGAAATCTTTCAGGGAATAGGCA 227

Qy   246 CATTGAAGAACCAAAACTGCCCACGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTT 305
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   226 CACTGGAGAGTCAAACTGTGCAAGGGGGGTACTGTGGAAAGAACTATTCCATAAAGAATAGGCCA 167

Qy   306 TAATAAAAGAACACATAGAGGCGCC -AAAAAAAAAGGTGTGTCCAGGAGGAAAAGATGGAGAGTG 364
              ||| ||||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||
Db   166 TAATAAAAGAAATACATTGACGGCGCCAAAAAAAAAAGTGTGGAGAGAAGAACGAGAGTA 107

Qy   365 ACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGACGTGGGACACCG 424
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   106 AACCAATTCCTAGACTACCTGCAAGTTTCTTGGTGTAATGAACACCGAGTGGGATAATA 47

Qy   425 GAAAGTTGAGAACAAAACCGGCTTAT 449
              |||||||||||||||||| ||| |||
Db   46 GAAAGTTGAGACTAAACTGGTTTGT 22

TITLE   Homo sapiens IL5 gene, genomic survey sequence.

LOCUS   AY412020
DEFINITION Homo sapiens IL5 gene, VIRTUAL TRANSCRIPT, partial sequence,
ACCESSION   AY412020
VERSION   AY412020.1 GI:39767985
KEYWORDS   GSS.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 405)
AUTHORS   Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
            Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
            Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
            Adams,M.D. and Cargill,M.
TITLE   Inferring nonneutral evolution from human-chimp-mouse orthologous
            gene trios
JOURNAL   Science 302 (5652), 1960-1963 (2003)
PUBMED   14671302
REFERENCE   2 (bases 1 to 405)
AUTHORS   Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
            Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
            Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
            Adams,M.D. and Cargill,M.

THIS PAGE BLANK (USPTO)

OM nucleic - nucleic search, using sw model

Copyright (c) 1993 - 2005 Compugen Ltd.

GenCore version 5.1.6

Run on: August 8, 2005, 13:33:24 ; Search time 1936.27 Seconds
                                       (without alignments)
                                       10060.080 Million cell updates/sec

Title: US-10-787-382-7
Perfect score: 402
Sequence: 1 atgagaatgcttctgaattt...........ccgagtggacaccggaaagt 402
Scoring table: Gapop 60.0 , Gapext 60.0
Searched: OLIGO_NUC
Word size :   0
Total number of hits satisfying chosen parameters: 9416466
Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database :   GenEmbl:*
                1: gb_ba:*
                2: gb_htg:*
                3: gb_in:*
                4: gb_om:*
                5: gb_ov:*
                6: gb_pat:*
                7: gb_ph:*
                8: gb_pl:*
                9: gb_pr:*
               10: gb_ro:*
               11: gb_st:*
               12: gb_sy:*
               13: gb_un:*
               14: gb_vi:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.		Score	% Match	Query Length	DB	ID	Description
1		402	100.0	402	6	BD211560	BD211560 Canine an
2		402	100.0	402	6	BD211561	BD211561 Canine an
3	c	402	100.0	402	6	AR241538	AR241538 Sequence
4	c	402	100.0	402	6	AR241539	AR241539 Sequence
5	c	402	100.0	402	6	AR254494	AR254494 Sequence
6	c	402	100.0	402	6	AR254495	AR254495 Sequence
7	c	402	100.0	402	4	AF331919	AF331919 Canis fam
8	c	402	100.0	610	6	BD211558	BD211558 Canine an
9	c	402	100.0	610	6	BD211559	BD211559 Canine an
10	c	402	100.0	610	6	AR241536	AR241536 Sequence
11	c	402	100.0	610	6	AR241537	AR241537 Sequence
12	c	402	100.0	610	6	AR254492	AR254492 Sequence
13	c	402	100.0	610	6	AR254493	AR254493 Sequence
14	c	393	97.8	405	6	AX083939	AX083939 Sequence
15	c	393	97.8	405	6	AR300436	AR300436 Sequence
16	c	345	85.8	345	6	BD211562	BD211562 Canine an
17	c	345	85.8	345	6	BD211563	BD211563 Canine an
18	c	345	85.8	345	6	AR241540	AR241540 Sequence
19	c	345	85.8	345	6	AR241541	AR241541 Sequence
20	c	345	85.8	345	6	AR254496	AR254496 Sequence
21	c	345	85.8	345	6	AR254497	AR254497 Sequence
22		271	67.4	356	4	AF091133	AF091133 Canis fam
23		250	62.2	343	4	AX083948	AX083948 Sequence
24		144	35.8	1658	4	AF331920	AF331920 Canis fam
25		43	10.7	520	4	OAU35038	U35038 Ovis aries
26		43	10.7	1140	4	OAILV1	U17052 Ovis aries
27		42	10.4	405	4	OAILV1	AJ010088 Sus scrof
28		42	10.4	529	4	SSC010088	SSC010088 Sus scrof
29		41	10.2	405	4	AJ133452	AJ133452 Sus scrof
30		41	10.2	405	4	AF068770	AF068770 Felis cat
31		41	10.2	838	4	BTINTLEUS	Z67872 B.taurus mR
32		41	10.2	197131	4	AF025436	AF025436 Felis cat
33		40	10.0	405	4	AC149665	AC149665 Bos tauru
34		30	7.5	354	4	U91947	U91947 Equus cabal
35		29	7.2	405	4	AF051372	AF051372 Felis cat
36		29	7.2	213042	2	AC151015	AC151015 Callithri
37		28	7.0	564	9	AF294756	AF294756 Saimiri s
38		28	7.0	150124	2	CPU34588	U34588 Cavia porce
39	c	25	6.2	167036	10	AC148886	AC148886 Otolemur
40		22	5.5	27	6	AC148855	AC148855 Otolemur
41		22	5.5	47	5	I39768	I39768 Sequence 41
42	c	22	5.5	405	9	I71456	I71456 Sequence 2
43	c	22	5.5	405	9	CEVINSA	L26033 Cercocebus
44		22	5.5	421	12	SYNILSA	M33949 Synthetic h
45		22	5.5	450	4	OAILV2	U17053 Ovis aries

ALIGNMENTS

RESULT 1
BD211560
LOCUS   BD211560   402 bp   DNA   linear   PAT 17-JUL-2003
DEFINITION   Canine and feline immunoregulatory proteins, nucleic acid molecules
                and method of using the same.
ACCESSION   BD211560
VERSION   BD211560.1 GI:33021330
KEYWORDS   JP 2002516104-A/66.
SOURCE   Canis familiaris (dog)
  ORGANISM   Canis familiaris
                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1 (bases 1 to 402)
  AUTHORS   Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine and feline immunoregulatory proteins, nucleic acid molecules
                and method of using the same
  JOURNAL   Patent: JP 2002516104-A 66 04-JUN-2002;
                HESKA CORP
COMMENT   Canis familiaris (dog)
PN   JP 2002516104-A/66
PD   04-JUN-2002
PF   28-MAY-1999 JP 2000551002
PR   29-MAY-1998 US   60/087306
PI   GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
                C12N15/09,A61K31/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
PC   A61K39/395,
PC   A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,
PC   C07K14/54,
PC   C07K14/56,C07K14/705,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
                G01N33/15,
PC   G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC   Canine
                and feline immunoregulatory proteins, nucleic acid CC
                molecules and
CC   method of using the same
FH   Key   Location/Qualifiers
FT   source   1..402
FEATURES   Location/Qualifiers
     source   1..402
                     /organism="Canis familiaris (dog)'.
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9615"

(below, repeated:)
FEATURES   Location/Qualifiers
     source   1..402
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9615"

RESULT 2

LOCUS   BD211561/c

DEFINITION   BD211561
               Canine and feline immunoregulatory proteins, nucleic acid molecules
               and method of using the same.

ACCESSION   BD211561

VERSION   BD211561.1   GI:33021331

KEYWORDS   JP 200251610A-A/67.

SOURCE   Canis familiaris

ORGANISM   Canis familiaris
               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
               Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.

REFERENCE   1 (bases 1 to 402)

AUTHORS   Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.

TITLE   Canine and feline immunoregulatory proteins, nucleic acid molecules
               and method of using the same

JOURNAL   Patent: JP 200251610A-A 67 04-JUN-2002;
               HESKA CORP

COMMENT   OS   Canis familiaris (dog)
               PN   JP 200251610A-A/67
               PD   04-JUN-2002
               PF   28-MAY-1999 JP 200051002
               PR   29-MAY-1998 US 60/087306
               PI   GEKKEE SIM,SHUMIN YANG,MATHEW J DREITZ,RAMANI S WONDERLING PC
               C12N15/09,A61K31/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
               PC   A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,C07K14/535,
               PC   C07K14/54,
               PC   C07K14/56,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
               G01N33/15,
               PC   G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC   Canine
               and feline immunoregulatory proteins, nucleic acid CC
               molecules and
               CC   method of using the same
               FT   Key   Location/Qualifiers
               FH
               FH   source   1..402
               FT   /organism='Canis familiaris (dog)'.

FEATURES   Location/Qualifiers

                     source   1..402
                                     /organism="Canis familiaris"
                                     /mol_type="genomic DNA"
                                     /db_xref="taxon:9615"

ORIGIN

Qy   1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTTCTGGGGGCTGCCTAGTTTCTGCCTTT 60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTTCTGGGGGCTGCCTAGTTTCTGCCTTT 60

Qy   61 GCTGTGAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTGAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy   121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGAATTCCTTACTCCTTGAAAATAAAATCAC 180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGAATTCCTTACTCCTTGAAAATAAAATCAC 180

Qy   181 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCCCAC 240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCCCAC 240

Qy   241 GGGGAGGCGTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 GGGGAGGCGTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300

Qy   301 CAAAAAAAAAGGTGTGCAGAGAAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAAAAAAAAGGTGTGCAGAGAAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Qy   361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCCGGAAAGT 402
         |||||||||||||||||||||||||||||||||||||||||||
Db   361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCCGGAAAGT 402

Query Match   100.0%;   Score 402;   DB 6;   Length 402;
Best Local Similarity   100.0%;   Pred. No. 2e-218;
Matches 402;   Conservative   0;   Mismatches 0;   Indels   0;   Gaps   0;

ORIGIN

                     source   1..402
                                     /organism="Canis familiaris"
                                     /mol_type="genomic DNA"
                                     /db_xref="taxon:9615"

RESULT 3

LOCUS   AR241538

DEFINITION   AR241538
               Sequence 83 from patent US 6471957.

ACCESSION   AR241538

VERSION   AR241538.1   GI:27287247

KEYWORDS   .

SOURCE   Unknown.

ORGANISM   Unknown.
               Unclassified.

REFERENCE   1 (bases 1 to 402)

AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.

TITLE   Canine IL-4 immunoregulatory proteins and uses thereof

JOURNAL   Patent: US 6471957-A 83 29-OCT-2002;

FEATURES   Location/Qualifiers

                     source   1..402
                                     /organism="unknown"
                                     /mol_type="genomic DNA"

ORIGIN

Query Match   100.0%;   Score 402;   DB 6;   Length 402;
Best Local Similarity   100.0%;   Pred. No. 2e-218;
Matches 402;   Conservative   0;   Mismatches 0;   Indels   0;   Gaps   0;

Qy   1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTTCTGGGGGCTGCCTAGTTTCTGCCTTT 60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   42 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTTCTGGGGGCTGCCTAGTTTCTGCCTTT 60

Qy   61 GCTGTGAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   342 GCTGTGAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 283

Qy   121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGAATTCCTTACTCCTTGAAAATAAAATCAC 180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   282 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGAATTCCTTACTCCTTGAAAATAAAATCAC 223

Qy   181 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCCCAC 240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   222 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCCCAC 163

Qy   241 GGGGAGGCGTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   162 GGGGAGGCGTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 103

Qy   301 CAAAAAAAAAGGTGTGCAGAGAAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   102 CAAAAAAAAAGGTGTGCAGAGAAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 43

Qy   361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCCGGAAAGT 402
         |||||||||||||||||||||||||||||||||||||||||||
Db   42 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCCGGAAAGT 1

RESULT 4

```
LOCUS       AR241539/c
DEFINITION  AR241539 Sequence 84 from patent US 6471957.
ACCESSION   AR241539
VERSION     AR241539.1  GI:27287248
KEYWORDS
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Canine IL-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 84 29-OCT-2002;
FEATURES             Location/Qualifiers
     source          1..402
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN
```

```
LOCUS       AR241539                402 bp    DNA     linear   PAT 20-DEC-2002
```

Query Match   100.0%;   Score 402; DB 6; Length 402;
Best Local Similarity 100.0%; Pred. No. 2e-218;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTCTTGCCTTT    60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        402 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 343

Qy         61 GCTGTGAGAAAATCCCATGAAATAGACTGGTGGCAGAGACAGACCTTGACACTGCTCCCACTCAT 120
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        342 GCTGTGAGAAAATCCCATGAAATAGACTGGTGGCAGAGACAGACCTTGACACTGCTCCCACTCAT 283

Qy        121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAAAATAAAAATCAC 180
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        282 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAAAATAAAAATCAC 223

Qy        181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCCCAC 240
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        222 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCCCAC 163

Qy        241 GGGGAGGGCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATTAAAAAGAACACATAGAGCGC 300
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        162 GGGGAGGGCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATTAAAAAGAACACATAGAGCGC 103

Qy        301 CAAAAAAAAGGTGTCGCAGGAGAAAGATGGAGAGTGACAAAAGTTCCTAGACTACCTGCAA 360
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        102 CAAAAAAAAGGTGTCGCAGGAGAAAGATGGAGAGTGACAAAAGTTCCTAGACTACCTGCAA 43

Qy        361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
              ||||||||||||||||||||||||||||||||||||||||||
Db         42 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 1
```

RESULT 5

```
LOCUS       AR254494
DEFINITION  AR254494 Sequence 83 from patent US 6482403.
ACCESSION   AR254494
VERSION     AR254494.1  GI:27303382
KEYWORDS
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Caniney Il-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 83 19-NOV-2002;
FEATURES             Location/Qualifiers
     source          1..402
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN
```

```
LOCUS       AR254494                402 bp    DNA     linear   PAT 20-DEC-2002
```

Query Match   100.0%;   Score 402; DB 6; Length 402;
Best Local Similarity 100.0%; Pred. No. 2e-218;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTCTTGCCTTT    60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 60

Qy         61 GCTGTAGAAAATCCCATGAAATAGACTGGTGGCAGAGACAGACCTTGACACTGCTCCCACTCAT 120
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 GCTGTAGAAAATCCCATGAAATAGACTGGTGGCAGAGACAGACCTTGACACTGCTCCCACTCAT 120

Qy        121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAAAATAAAAATCAC 180
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAAAATAAAAATCAC 180

Qy        181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCCCAC 240
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCCCAC 240

Qy        241 GGGGAGGGCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATTAAAAAGAACACATAGAGCGC 300
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 GGGGAGGGCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATTAAAAAGAACACATAGAGCGC 300

Qy        301 CAAAAAAAAGGTGTCGCAGGAGAAAGATGGAGAGTGACAAAAGTTCCTAGACTACCTGCAA 360
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 CAAAAAAAAGGTGTCGCAGGAGAAAGATGGAGAGTGACAAAAGTTCCTAGACTACCTGCAA 360

Qy        361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
              ||||||||||||||||||||||||||||||||||||||||||
Db        361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
```

RESULT 6

```
LOCUS       AR254495/c
DEFINITION  AR254495 Sequence 84 from patent US 6482403.
ACCESSION   AR254495
VERSION     AR254495.1  GI:27303383
KEYWORDS
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Caniney Il-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 84 19-NOV-2002;
FEATURES             Location/Qualifiers
     source          1..402
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN
```

```
LOCUS       AR254495                402 bp    DNA     linear   PAT 20-DEC-2002
```

Query Match   100.0%;   Score 402; DB 6; Length 402;

RESULT 7

```
Best Local Similarity  100.0%;  Pred. No. 2e-218;  Mismatches 0;  Indels 0;  Gaps 0;
Matches 402;  Conservative 0;

Qy     1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTTCTGCCTTT   60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   402 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTTCTGCCTTT  343

Qy    61 GCTGTGAGAAAATCCCATGAATAGACTGGTCGCAGAGACCTTGACACTGCTCTCCACTCAT   120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   342 GCTGTGAGAAAATCCCATGAATAGACTGGTCGCAGAGACCTTGACACTGCTCTCCACTCAT  283

Qy   121 CGAACTTGGCTGATAGGCCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAATCAC  180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   282 CGAACTTGGCTGATAGGCCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAATCAC  223

Qy   181 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGGTATAGACACATTGAAGAACCAAAACTGCCCAC  240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   222 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGGTATAGACACATTGAAGAACCAAAACTGCCCAC  163

Qy   241 GGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACACATAGAGCGC  300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   162 GGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACACATAGAGCGC  103

Qy   301 CAAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGGTGACAAAGTTCCTAGACTACCTGCAA  360
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   102 CAAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGGTGACAAAGTTCCTAGACTACCTGCAA  43

Qy   361 GTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCGGAAAGT   402
         ||||||||||||||||||||||||||||||||||||||||||||
Db    42 GTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCGGAAAGT    1
```

```
LOCUS       AF331919    610 bp    mRNA    linear    MAM 04-OCT-2001
DEFINITION  Canis familiaris interleukin-5 mRNA, complete cds.
ACCESSION   AF331919
VERSION     AF331919.1  GI:15919180
KEYWORDS    .
SOURCE      Canis familiaris (dog)
  ORGANISM  Canis familiaris
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1  (bases 1 to 610)
  AUTHORS   Yang,S., Sellins,K.S., Weber,E. and McCall,C.
  TITLE     Canine interleukin-5: molecular characterization of the gene and
            expression of biologically active recombinant protein
  JOURNAL   J Interferon Cytokine Res. 21 (6), 361-367 (2001)
   MEDLINE  1144408
    PUBMED  1144408
REFERENCE   2  (bases 1 to 610)
  AUTHORS   Yang,S.
  TITLE     Direct Submission
  JOURNAL   Submitted (22-DEC-2000) Immunology, Heska Corporation, 1613
            Prospect Parkway, Ft Collins, CO 80525, USA
FEATURES             Location/Qualifiers
     source          1..610
                     /organism="Canis familiaris"
                     /mol_type="mRNA"
                     /db_xref="taxon:9615"
     5'UTR           1..28
     CDS             29..433
                     /codon_start=1
                     /product="interleukin-5"
                     /note="IL-5"
                     /protein_id="AAL10715.1"
                     /db_xref="GI:15919181"
                     /translation="MRMLNLSLLALGHAYSAFAVENPMNRLVAETLTLLSTHRTWL
                     IGDNLMIPTPENKNHQLCIKEVPQGIDTLKNQTAHGEAVDKLFQNLSLIKEHIERQK
                     KRCAGERWRVTKFDLYLQVFLGVINTEWPES"
     3'UTR           433..610
ORIGIN
```

RESULT 8

```
Query Match       100.0%;  Score 402;  DB 4;  Length 610;
Best Local Similarity  100.0%;  Pred. No. 2.1e-218;
Matches 402;  Conservative 0;  Mismatches 0;  Indels 0;  Gaps 0;

Qy     1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTTCTGCCTTT   60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    29 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTTCTGCCTTT   88

Qy    61 GCTGTGAGAAAATCCCATGAATAGACTGGTCGCAGAGACCTTGACACTGCTCTCCACTCAT   120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    89 GCTGTGAGAAAATCCCATGAATAGACTGGTCGCAGAGACCTTGACACTGCTCTCCACTCAT  148

Qy   121 CGAACTTGGCTGATAGGCCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAATCAC  180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   149 CGAACTTGGCTGATAGGCCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAATCAC  208

Qy   181 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGGTATAGACACATTGAAGAACCAAAACTGCCCAC  240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   209 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGGTATAGACACATTGAAGAACCAAAACTGCCCAC  268

Qy   241 GGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACACATAGAGCGC  300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   269 GGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACACATAGAGCGC  328

Qy   301 CAAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGGTGACAAAGTTCCTAGACTACCTGCAA  360
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   329 CAAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGGTGACAAAGTTCCTAGACTACCTGCAA  388

Qy   361 GTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCGGAAAGT   402
         |||||||||||||||||||||||||||||||||||||||||||||
Db   389 GTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCGGAAAGT  430
```

```
LOCUS       BD211558    610 bp    DNA    linear    PAT 17-JUL-2003
DEFINITION  Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same.
ACCESSION   BD211558
VERSION     BD211558.1  GI:33021328
KEYWORDS    JP 2002516104-A/64.
SOURCE      Canis familiaris (dog)
  ORGANISM  Canis familiaris
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1  (bases 1 to 610)
  AUTHORS   Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same
  JOURNAL   Patent: JP 2002516104-A 64 04-JUN-2002;
            HESKA CORP
COMMENT     OS   Canis familiaris (dog)
            PN   JP 2002516104-A/64
            PD   04-JUN-2002
            PF   28-MAY-1999 JP 2000551002
            PR   29-MAY-1998 US   60/087306
            PI   GBKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
                 C12N15/09,A61K31/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
            PC   A61K39/395,
            PC   A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,C07K14/535,
            PC   C07K14/54,
            PC   C07K14/56,C07K14/705,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
                 G01N33/15,
            PC   G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC        Canine
            and feline immunoregulatory proteins, nucleic acid CC
            molecules and method of using the same
            CC
FEATURES             Location/Qualifiers
     source          1..610
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
```

ORIGIN   /db_xref="taxon:9615"

Qy Query Match   100.0%; Score 402; DB 6; Length 610;
    Best Local Similarity 100.0%; Pred. No. 2.1e-218;
    Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTGCCATGT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTGCCATGT 88

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGAACCTTGACACTG 110
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   89 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGAACCTTGACACTG 148

Qy   121 CGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCCTGA 170
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   149 CGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCCTGA 208

Qy   181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCA 230
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   209 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCA 268

Qy   241 GGGGAGGCTGTGGATAAACTATTCCAAAAACTTGTCTCTTAATAAAAAGA 290
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   269 GGGGAGGCTGTGGATAAACTATTCCAAAAACTTGTCTCTTAATAAAAAGA 328

Qy   301 CAAAAAAAAAGGTTGTCGAGAGAGAGATGAGACAAAGTTCCTAGACTACC 350
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   329 CAAAAAAAAAGGTTGTCGAGAGAGAGATGAGACAAAGTTCCTAGACTACC 388

Qy   361 GTATTTCTTCGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
          |||||||||||||||||||||||||||||||||||||||||||||
Db   389 GTATTTCTTCGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 430

RESULT 9
BD211559/c
LOCUS   BD211559   610 bp   DNA   linear   PAT 17-JUL-2003
DEFINITION Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same.
ACCESSION   BD211559
VERSION   BD211559.1 GI:3021329
KEYWORDS   JP 2002516104-A/65.
SOURCE   Canis familiaris
  ORGANISM Canis familiaris (dog)
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1 (bases 1 to 610)
  AUTHORS   Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same
  JOURNAL   Patent: JP 2002516104-A 65 04-JUN-2002;
            HESKA CORP
  COMMENT   OS Canis familiaris (dog)
            PN JP 2002516104-A/65
            PD 04-JUN-2002
            PF 28-MAY-1999 JP 2000551002
            PR 29-MAY-1998 US 60/087306
            PI GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
            C12N15/09,A61K31/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
            PC A61K39/395,A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,C07K14/535,
            PC C07K14/54,
            PC C07K14/56,C07K14/705,C07K16/24,C07K16/28,C12N1/21,C12N5/00 PC
            G01N33/15,
            PC G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC Canine
            and feline immunoregulatory proteins, nucleic acid CC
            molecules and
            CC method of using the same
FEATURES   Location/Qualifiers
     source   1..610
                     /organism="Canis familiaris (dog)".

ORIGIN

Qy Query Match   100.0%; Score 402; DB 6; Length 610;
    Best Local Similarity 100.0%; Pred. No. 2.1e-218;
    Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTGCCATGT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   582 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTGCCATGT 523

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGAACCTTGACACTG 110
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   522 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGAACCTTGACACTG 463

Qy   121 CGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCCTGA 170
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   462 CGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCCTGA 403

Qy   181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCA 230
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   402 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCA 343

Qy   241 GGGGAGGCTGTGGATAAACTATTCCAAAAACTTGTCTCTTAATAAAAAGA 290
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   342 GGGGAGGCTGTGGATAAACTATTCCAAAAACTTGTCTCTTAATAAAAAGA 283

Qy   301 CAAAAAAAAAGGTTGTCGAGAGAGAGATGAGACAAAGTTCCTAGACTACC 350
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   282 CAAAAAAAAAGGTTGTCGAGAGAGAGATGAGACAAAGTTCCTAGACTACC 223

Qy   361 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
          |||||||||||||||||||||||||||||||||||||||||||||
Db   222 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 181

RESULT 10
AR241536
LOCUS   AR241536   610 bp   DNA   linear   PAT 20-DEC-2002
DEFINITION Sequence 80 from patent US 6471957.
ACCESSION   AR241536
VERSION   AR241536.1 GI:27287245
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 610)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine IL-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 80 29-OCT-2002;
FEATURES   Location/Qualifiers
     source   1..610
                     /organism="unknown"
                     /mol_type="genomic DNA"

ORIGIN

Qy Query Match   100.0%; Score 402; DB 6; Length 610;
    Best Local Similarity 100.0%; Pred. No. 2.1e-218;
    Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTGCCATGT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTGCCATGT 88

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGAACCTTGACACTG 110
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   89 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGAACCTTGACACTG 148

Qy   121 CGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCCTGA 170
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   149 CGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCCTGA 180

RESULT 11

```
AR241537/c
LOCUS       AR241537      610 bp    DNA    linear   PAT 20-DEC-2002
DEFINITION  Sequence 82 from patent US 6471957.
ACCESSION   AR241537
VERSION     AR241537.1  GI:27287246
KEYWORDS
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 610)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Canine IL-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 82 29-OCT-2002;
FEATURES             Location/Qualifiers
     source          1..610
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

  Query Match             100.0%;  Score 402;  DB 6;  Length 610;
  Best Local Similarity   100.0%;  Pred. No. 2.1e-218;
  Matches  402;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy      1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTGGGGTGCCTTT    60
          ||||||||||||||||||||||||||||||||||||||||||||||||
Db    582 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTGGGGTGCCTTT    523

Qy     61 GCTGTAGAAAATCCCATGAATAGACTGGTGCCAGAGACCTTGACACTGC    120
          ||||||||||||||||||||||||||||||||||||||||||||||||
Db    522 GCTGTAGAAAATCCCATGAATAGACTGGTGGCCAGAGACCTTGACACTGCAT    463

Qy    121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATCCTACTCCTCC    180
          ||||||||||||||||||||||||||||||||||||||||||||
Db    462 CGAACTTGGCTGATAGGCGATGGGGAACCTGATCCTACTCCTCC    403

Qy    181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACACAAACTGCCCAC    240
          ||||||||||||||||||||||||||||||||||||||||||||
Db    402 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACACAAACTGCCCAC    343

Qy    241 GGGGGAGGCCTGTGGATAAAACTATTCCAAAACACATAGAGCGC    300
          ||||||||||||||||||||||||||||||||||||||||||||
Db    342 GGGGGAGGCCTGTGGATAAAACTATTCCAAAACACATAGAGCGC    283

Qy    301 CAAAAAAAAAGGTGTCCAGGAGAAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA    360
          ||||||||||||||||||||||||||||||||||||||||||||
Db    282 CAAAAAAAAAGGTGTCCAGGAGAAAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA    223

Qy    361 GTATTTCTTGGTGTGTAATAAACACCCGAGTGGACACCCGGAAAGT    402
          ||||||||||||||||||||||||||||||||||||||||||||
Db    222 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT    181
```

RESULT 12

```
AR254492
LOCUS       AR254492      610 bp    DNA    linear   PAT 20-DEC-2002
DEFINITION  Sequence 80 from patent US 6482403.
ACCESSION   AR254492
VERSION     AR254492.1  GI:27303380
KEYWORDS
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 610)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Caniney IL-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 80 19-NOV-2002;
FEATURES             Location/Qualifiers
     source          1..610
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

  Query Match             100.0%;  Score 402;  DB 6;  Length 610;
  Best Local Similarity   100.0%;  Pred. No. 2.1e-218;
  Matches  402;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy      1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTGGGGTGCCTTT    60
          ||||||||||||||||||||||||||||||||||||||||||||||||
Db     29 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTGGGGTGCCTTT    88

Qy     61 GCTGTAGAAAATCCCATGAATAGACTGGTGCCAGAGACCTTGACACTGC    120
          ||||||||||||||||||||||||||||||||||||||||||||||||
Db     89 GCTGTAGAAAATCCCATGAATAGACTGGTGGCCAGAGACCTTGACACTGCAT    148

Qy    121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATCCTACTCCTCC    180
          ||||||||||||||||||||||||||||||||||||||||||||
Db    149 CGAACTTGGCTGATAGGCGATGGGGAACCTGATCCTACTCCTCC    208

Qy    181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACACAAACTGCCCAC    240
          ||||||||||||||||||||||||||||||||||||||||||||
Db    209 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACACAAACTGCCCAC    268

Qy    241 GGGGGAGGCCTGTGGATAAAACTATTCCAAAACACATAGAGCGC    300
          ||||||||||||||||||||||||||||||||||||||||||||
Db    269 GGGGGAGGCCTGTGGATAAAACTATTCCAAAACACATAGAGCGC    328

Qy    301 CAAAAAAAAAGGTGTCCAGGAGAAAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA    360
          ||||||||||||||||||||||||||||||||||||||||||||
Db    329 CAAAAAAAAAGGTGTCCAGGAGAAAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA    388

Qy    361 GTATTTCTTGGTGTGTAATAAACACCCGAGTGGACACCCGGAAAGT    402
          ||||||||||||||||||||||||||||||||||||||||||||
Db    389 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT    430
```

RESULT 13

```
AR254493/c
LOCUS       AR254493      610 bp    DNA    linear   PAT 20-DEC-2002
DEFINITION  Sequence 82 from patent US 6482403.
ACCESSION   AR254493
VERSION     AR254493.1  GI:27303381
KEYWORDS
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 610)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Caniney IL-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 82 19-NOV-2002;
FEATURES             Location/Qualifiers
     source          1..610
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN
```

```
Query Match    100.0%;   Score 402;  DB 6;  Length 610;
Best Local Similarity   100.0%;   Pred. No. 2.1e-218;
Matches 402; Conservative   0; Mismatches   0;  Indels   0;  Gaps   0;

Qy      1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCATATGTTTCTGCCTTT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    582 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCATATGTTTCTGCCTTT 523

Qy     61 GCTGTGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    522 GCTGTGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 463

Qy    121 CGAACTTGGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    462 CGAACTTGGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 403

Qy    181 CAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGAGACACATTGAAGAACCAAAACTGCCCAC 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    402 CAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGAGACACATTGAAGAACCAAAACTGCCCAC 343

Qy    241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    342 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 283

Qy    301 CAAAAAAAAGGTGTGTCAGAGAAGAAGATGGAGAGTGACAAAAGTTCCTTAGACTACCTTGCAA 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    282 CAAAAAAAAGGTGTGTCAGAGAAGAAGATGGAGAGTGACAAAAGTTCCTTAGACTACCTTGCAA 223

Qy    361 GTATTTCTTCGGTGTGTAATAAAACACCGAGTGGACACCCGAGAAGT 402
          ||||||||||||||||||||||||||||||||||||||
Db    222 GTATTTCTTCGGTGTGTAATAAAACACCGAGTGGACACCCGAGAAAGT 181


RESULT 14
LOCUS        AR300436      405 bp    DNA    linear    PAT 12-JUN-2003
DEFINITION   Sequence 1 from patent US 6537781.
ACCESSION    AR300436
VERSION      AR300436.1  GI:31687875
KEYWORDS     .
SOURCE       Unknown.
  ORGANISM   Unknown.
             Unclassified.
REFERENCE    1  (bases 1 to 405)
  AUTHORS    Guo,H., Lawton,R., Mermer,B. and Aiyappa,A.P.
  TITLE      Methods and compositions concerning canine interleukin 5
  JOURNAL    Patent: US 6537781-A 1 25-MAR-2003;
FEATURES             Location/Qualifiers
     source          1..405
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match    97.8%;   Score 393;  DB 6;  Length 405;
Best Local Similarity   100.0%;   Pred. No. 2.9e-213;
Matches 393; Conservative   0; Mismatches   0;  Indels   0;  Gaps   0;

Qy      1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCATATGTTTCTGCCTTT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCATATGTTTCTGCCTTT 60

Qy     61 GCTGTGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 GCTGTGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy    121 CGAACTTGGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 CGAACTTGGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 180

Qy    181 CAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGAGACACATTGAAGAACCAAAACTGCCCAC 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 CAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGAGACACATTGAAGAACCAAAACTGCCCAC 240

Qy    241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300

Qy    301 CAAAAAAAAGGTGTGTCAGAGAAGAAGATGGAGAGTGACAAAAGTTCCTTAGACTACCTTGCAA 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 CAAAAAAAAGGTGTGTCAGAGAAGAAGATGGAGAGTGACAAAAGTTCCTTAGACTACCTTGCAA 360

Qy    361 GTATTTCTTCGGTGTGTAATAAAACACCGAGTGGACA 393
          |||||||||||||||||||||||||||||||
Db    361 GTATTTCTTCGGTGTGTAATAAAACACCGAGTGGACA 393


RESULT 15
LOCUS        AX083939      405 bp    DNA    linear    PAT 22-JUN-2001
DEFINITION   Sequence 1 from Patent WO0111049.
ACCESSION    AX083939
VERSION      AX083939.2  GI:14532940
KEYWORDS     .
SOURCE       Canis familiaris (dog)
  ORGANISM   Canis familiaris
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE    1
  AUTHORS    Guo,H., Lawton,R., Mermer,B. and Aiyappa,A.P.
  TITLE      Methods and compositions concerning canine interleukin 5
  JOURNAL    Patent: WO 0111049-A 1 15-FEB-2001;
             IDEXX LABORATORIES, INC. (US)
COMMENT      On Jun 24, 2001 this sequence version replaced gi:13185501.
FEATURES             Location/Qualifiers
     source          1..405
                     /organism="Canis familiaris"
                     /mol_type="unassigned DNA"
                     /db_xref="taxon:9615"
ORIGIN

Query Match    97.8%;   Score 393;  DB 6;  Length 405;
Best Local Similarity   100.0%;   Pred. No. 2.9e-213;
Matches 393; Conservative   0; Mismatches   0;  Indels   0;  Gaps   0;

Qy      1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCATATGTTTCTGCCTTT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCATATGTTTCTGCCTTT 60

Qy     61 GCTGTGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 GCTGTGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy    121 CGAACTTGGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 CGAACTTGGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 180

Qy    181 CAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGAGACACATTGAAGAACCAAAACTGCCCAC 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 CAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGAGACACATTGAAGAACCAAAACTGCCCAC 240

Qy    241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300

Qy    301 CAAAAAAAAGGTGTGTCAGAGAAGAAGATGGAGAGTGACAAAAGTTCCTTAGACTACCTTGCAA 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 CAAAAAAAAGGTGTGTCAGAGAAGAAGATGGAGAGTGACAAAAGTTCCTTAGACTACCTTGCAA 360

Qy    361 GTATTTCTTCGGTGTGTAATAAAACACCGAGTGGACA 393
          |||||||||||||||||||||||||||||||
Db    361 GTATTTCTTCGGTGTGTAATAAAACACCGAGTGGACA 393

Search completed: August  8, 2005, 20:39:49
Job time : 1936.27 secs
```

THIS PAGE BLANK (USPTO)

OM nucleic - nucleic search, using sw model

```
Copyright (c) 1993 - 2005 Compugen Ltd.

                    GenCore version 5.1.6

Run on:             August  8, 2005, 09:20:09 ; Search time 269.467 Seconds
                                               (without alignments)
                                               8831.282 Million cell updates/sec

Title:              US-10-787-382-7
Perfect score:      402
Sequence:           1 atgagaatgctctcgaattt..........ccgagtggacaccggaaagt 402
Searched:           4390206 seqs, 295970667 residues
Scoring table:      Gapop 60.0 , Gapext 60.0
                    OLIGO_NUC
Word size :         0

Total number of hits satisfying chosen parameters:     8780412

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database :          N_Geneseq_16Dec04

                    1: geneseqn1980s:*
                    2: geneseqn1990s:*
                    3: geneseqn200s:*
                    4: geneseqn2001as:*
                    5: geneseqn2001bs:*
                    6: geneseqn2002as:*
                    7: geneseqn2002bs:*
                    8: geneseqn2003as:*
                    9: geneseqn2003bs:*
                   10: geneseqn2003cs:*
                   11: geneseqn2003ds:*
                   12: geneseqn2004as:*
                   13: geneseqn2004bs:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.
```

SUMMARIES

Result No.	Score	Query Match %	Length	DB	ID	Description
1	402	100.0	402	3	AAZ55548	Aaz55548 Canine in
c 2	402	100.0	402	3	AAZ55549	Aaz55549 Canine in
c 3	402	100.0	610	3	AAZ55546	Aaz55546 Canine in
c 4	402	100.0	610	3	AAZ55547	Aaz55547 Canine in
c 5	393	97.8	405	4	AAF74300	Aaf74300 Canine in
6	345	85.8	345	3	AAZ55550	Aaz55550 Canine ma
c 7	345	85.8	345	3	AAZ55551	Aaz55551 Canine ma
c 8	270	67.2	393	4	AAF74306	Aaf74306 Canine in
c 9	252	62.7	252	2	AAF74305	Aaf74305 Canine in
c 10	43	10.7	399	2	AAT50756	Aat50756 Ovine IL-
11	43	10.7	520	2	AAT50755	Aat50755 Ovine IL-
12	41	10.2	838	2	AAX44265	Aax44265 Porcine I
c 13	22	5.5	27	2	AAQ57191	Aaq57191 Enzymatic
c 14	22	5.5	89	2	AAX54641	Aax54641 Human IL-
c 15	22	5.5	89	3	AAA34088	Aaa34088 Human ade
c 16	22	5.5	89	3	AAF20210	Aaf20210 Human IL5
c 17	22	5.5	89	4	ABZ95904	Abz95904 Human IL-
c 18	22	5.5	89	11	ABD19258	Abd19258 Human IL5
c 19	22	5.5	145	2	AAT06755	Aat06755 Synthetic
c 20	22	5.5	257	2	AAX54636	Aax54636 Human IL-
c 21	22	5.5	257	3	AAA34083	Aaa34083 Human ade
c 22	22	5.5	257	3	AAF20205	Aaf20205 Human IL5
c 23	22	5.5	257	10	ABZ95899	Abz95899 Human IL-
c 24	22	5.5	257	11	ABD19245	Abd19245 Human IL5
25	22	5.5	385	3	AAA43842	Aaa43842 Human sec
26	22	5.5	402	1	AAN81380	Aan81380 A human B
27	22	5.5	700	4	AAH92591	Aah92591 Human inf
28	22	5.5	816	3	AAA34857	Aaa34857 Human ade
29	22	5.5	816	3	AAA13338	Aaa13338 Human int
30	22	5.5	816	3	AAF20979	Aaf20979 Human low
31	22	5.5	816	10	ADG33104	Adg33104 Human DNA
32	22	5.5	816	10	ABZ96673	Abz96673 Human nuc
33	22	5.5	816	10	ACF63368	Acf63368 Human int
34	22	5.5	816	11	ADI31910	Adi31910 Human cDN
35	22	5.5	816	13	ADP56009	Adp56009 Human PRO
36	22	5.5	3230	1	AAN81381	Aan81381 Entire nu
37	22	5.5	3230	2	AAQ74056	Aaq74056 Human int
38	22	5.5	3230	3	AAC73725	Aac73725 Human IL-
39	22	5.5	3230	8	ABX04379	Abx04379 Human Int
40	22	5.5	3230	12	ADN12146	Adn12146 Interleuk
41	22	5.5	3230	12	ADR12056	Adr12056 Human int
42	22	5.5	3241	3	AAA34856	Aaa34856 Human low
43	22	5.5	3241	3	AAF20978	Aaf20978 Human low
44	22	5.5	3241	10	ABZ96672	Abz96672 Human nuc
45	22	5.5	4057	3	AAA34858	Aaa34858 Human ade

ALIGNMENTS

```
RESULT 1
AAZ55548
ID   AAZ55548 standard; cDNA; 402 BP.
XX
AC   AAZ55548;
XX
DT   14-MAR-2000  (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA coding region.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999;   99WO-US011942.
XX
PR   29-MAY-1998;   98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G,  Yang S,  Dreitz MJ,  Wonderling RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58219.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 225; 264pp; English.
XX
CC   Sequences AAZ55546-255551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154
CC   (CD40 ligand), canine IL-5, canine IL-13, feline interferon-alpha
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF),
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
```

CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory fragments (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting.
XX
SQ   Sequence 402 BP; 129 A; 79 C; 93 G; 101 T; 0 U; 0 Other;

Query Match   100.0%; Score 402; DB 3; Length 402;
Best Local Similarity   100.0%; Pred. No. 3.6e-198;
Matches   402; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 ATGAGAAATGCTTCTGAATTTGAGTTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 ATGAGAAATGCTTCTGAATTTGAGTTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 60

Qy   61 GCTGTAGAAAAATCCCATGAATAGACTGGGTGGCAGAGACCTTGACACTGCTTCCACTCAT 120
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTAGAAAAATCCCATGAATAGACTGGGTGGCAGAGACCTTGACACTGCTTCCACTCAT 120

Qy   121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCCTGAAAAATAAAATCAC 180
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCCTGAAAAATAAAATCAC 180

Qy   181 CAACTGTGCATTAAAGAAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CAACTGTGCATTAAAGAAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240

Qy   241 GGGGGAGGCCTGTGGGGATAAAACTATTCCAAAACTGTCTTTAATAAAGAACACATAGAGCGC 300
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 GGGGGAGGCCTGTGGGGATAAAACTATTCCAAAACTGTCTTTAATAAAGAACACATAGAGCGC 300

Qy   301 CAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Qy   361 GTATTTCTTGGTGTAATAAAACACCCGAGTGGACACCCGGAAAGT 402
              |||||||||||||||||||||||||||||||||||||||||||||
Db   361 GTATTTCTTGGTGTAATAAAACACCCGAGTGGACACCCGGAAAGT 402

RESULT 2
AAZ55549/c

ID   AAZ55549 standard; cDNA; 402 BP.
XX
AC   AAZ55549;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA coding region complement.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; 88.
XX
OS   Canis familiaris.
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PD   28-MAY-1999;
PF   98WO-US011942.
XX
PD   29-MAY-1998;
PR   98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
XX
PS   Claim 1h; Page 226; 264pp; English.
XX
CC   Sequences AAZ55546-Z55551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-5, canine or
CC   feline F1t-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory fragments (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting.
XX
SQ   Sequence 402 BP; 101 A; 93 C; 79 G; 129 T; 0 U; 0 Other;

Query Match   100.0%; Score 402; DB 3; Length 402;
Best Local Similarity   100.0%; Pred. No. 3.6e-198;
Matches   402; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 ATGAGAAATGCTTCTGAATTTGAGTTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   402 ATGAGAAATGCTTCTGAATTTGAGTTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 343

Qy   61 GCTGTAGAAAAATCCCATGAATAGACTGGGTGGCAGAGACCTTGACACTGCTTCCACTCAT 120
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   342 GCTGTAGAAAAATCCCATGAATAGACTGGGTGGCAGAGACCTTGACACTGCTTCCACTCAT 283

Qy   121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCCTGAAAAATAAAATCAC 180
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   282 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCCTGAAAAATAAAATCAC 223

Qy   181 CAACTGTGCATTAAAGAAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   222 CAACTGTGCATTAAAGAAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 163

Qy   241 GGGGGAGGCCTGTGGGGATAAAACTATTCCAAAACTGTCTTTAATAAAGAACACATAGAGCGC 300
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   162 GGGGGAGGCCTGTGGGGATAAAACTATTCCAAAACTGTCTTTAATAAAGAACACATAGAGCGC 103

Qy   301 CAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   102 CAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGAGTGACAAAGTTCCTAGACTACCTGCAA 43

Qy   361 GTATTTCTTGGTGTAATAAAACACCCGAGTGGACACCCGGAAAGT 402
              |||||||||||||||||||||||||||||||||||||||||||||
Db   42 GTATTTCTTGGTGTAATAAAACACCCGAGTGGACACCCGGAAAGT 1

RESULT 3
AAZ55546

ID   AAZ55546 standard; cDNA; 610 BP.
XX
AC   AAZ55546;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;

DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58219.
XX

KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss..
XX
OS   Canis familiaris.
XX
KW
XX
PD   02-DEC-1999.
XX
PN   WO9961618-A2.
XX
FT   /product= "Canine IL-5"
FT   /*tag= a
CDS   29..433
Key   Location/Qualifiers
FH   Key   Location/Qualifiers
XX
FT
XX
PR   29-MAY-1998;   98US-0087306P.
XX
PF   28-MAY-1999;   99WO-US011942.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wondering RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58219.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 223-224; 264pp; English.
XX
CC   Sequences AAZ55546-Z55551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine IL-5, canine or feline CD40, canine or
CC   feline interferon-alpha (IFN-alpha)
CC   ligand), canine IL-5, canine IL-13, feline interferon-alpha
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targetting
XX
SQ   Sequence 610 BP; 202 A; 114 C; 139 G; 155 T; 0 U; 0 Other;

Query Match   100.0%; Score 402; DB 3; Length 610;
Best Local Similarity   100.0%; Pred. No. 3.6e-198;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTTCTTGGGCGTGCCTATGTTTTCTGCCTTT 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTTCTTGGGCGTGCCTATGTTTTCTGCCTTT 88

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTTCTCCACTCAT 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   89 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTTCTCCACTCAT 148

Qy   121 CGAACTTGGCTGTCGATAGGCGATGGGACACCTGATGAATTCCTACTCCTGAAAATATNAAATTCAC 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   149 CGAACTTGGCTGTCGATAGGCGATGGGACACCTGATGAATTCCTACTCCTGAAAATAAAAATTCAC 208

Qy   181 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   209 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 268

Qy   241 GGGGAGGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAAACACATAGAGCGC 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   269 GGGGAGGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAAACACATAGAGCGC 328

Qy   301 CAAAAAAAAGGTGTGCAGGAGGAAAAGATGGAGAGTGAAGTGACAAAAGTTCCTAGACTACCTGCAA 360
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   329 CAAAAAAAAGGTGTGCAGGAGGAAAAGATGGAGAGTGAAGTGACAAAAGTTCCTAGACTACCTGCAA 388

Qy   361 GTATTTCTTGGTGTGTAATAAACACCGAGTGGGACACCCGGAAAGT 402
           ||||||||||||||||||||||||||||||||||||||||||||||
Db   389 GTATTTCTTGGTGTGTAATAAACACCGAGTGGGACACCCGGAAAGT 430

RESULT 4
AAZ55547/c
ID   AAZ55547 standard; cDNA; 610 BP.
XX
AC   AAZ55547;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA complement.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss..
XX
OS   Canis familiaris.
XX
FT   Key   Location/Qualifiers
CDS   complement(178..582)
FT   /*tag= a
FT   /product= "Canine IL-5"
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PR   28-MAY-1999;   99WO-US011942.
XX
PF   29-MAY-1998;   98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wondering RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58219.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 224-225; 264pp; English.
XX
CC   Sequences AAZ55546-Z55551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targetting
XX
SQ   Sequence 610 BP; 155 A; 139 C; 114 G; 202 T; 0 U; 0 Other;

Query Match   100.0%; Score 402; DB 3; Length 610;
Best Local Similarity   100.0%; Pred. No. 3.6e-198;

RESULT 5

Qy Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1 ATGAGAAATGCTTCTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTCGCTTAGTTTCTGCCTTT  60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  582 ATGAGAAATGCTTCTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTCGCTTAGTTTCTGCCTTT 523

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGGTGGCAGAGACTTGACACTGCTCTCCACTCAT    120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  522 GCTGTAGAAAATCCCATGAATAGACTGGGTGGCAGAGACTTGACACTGCTCTCCACTCAT    463

Qy  121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCCTGAAAATAAAATCAC  180
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  462 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCCTGAAAATAAAATCAC  403

Qy  181 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAACACAAAACTGCCCAC   240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  402 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAACACAAAACTGCCCAC   343

Qy  241 GGGGGAGGCCTGTGGATAAAACTATTCCCAAAACTTGTTCTTAATAAAAGAACACATAGAGCGC 300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  342 GGGGGAGGCCTGTGGATAAAACTATTCCCAAAACTTGTTCTTAATAAAAGAACACATAGAGCGC 283

Qy  301 CAAAAAAAAAGGTGTGCAGGAGGATGAGAGTGACAAAGTTCCTAGACTACCTGCAA      360
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  282 CAAAAAAAAAGGTGTGCAGGAGGATGAGAGTGACAAAGTTCCTAGACTACCTGCAA      223

Qy  361 GTATTTCTTGGTGTGTAATAAACACACCGAGTGGACACCGGAAAGT               402
        ||||||||||||||||||||||||||||||||||
Db  222 GTATTTCTTGGTGTGTAATAAACACACCGAGTGGACACCGGAAAGT               181
```

ID   AAF74300 standard; DNA; 405 BP.
XX
AC   AAF74300;
XX
DT   04-MAY-2001 (first entry)
XX
DE   Canine interleukin-5 coding sequence #1.
XX
KW   Dog; interleukin-5; IL-5; allergy; cancer; gene therapy;
KW   inflammatory reaction; ds.
XX
OS   Canis sp.
XX
XX
PN   WO20011049-A2.
XX
PD   15-FEB-2001.
XX
PF   09-AUG-2000; 2000WO-US021651.
XX
PR   10-AUG-1999; 99US-0371615.
XX
PA   (IDEX-) IDEXX LAB INC.
XX
PI   Guo H, Lawton R, Mermer B, Aiyappa AP;
XX
DR   WPI; 2001-191542/19.
DR   P-PSDB; AAB72615.
XX
PT   Novel canine interleukin 5 polynucleotide and polypeptides are used for
PT   generating antibodies which are useful in treating allergies in dogs.
XX
PS   Claim 31; Page 46; 48pp; English.
XX
CC   The present invention provides the protein and coding sequences of the
CC   canine interleukin-5 (IL-5) protein. This can be used to treat allergies,
CC   cancer and inflammatory reactions in dogs. The present sequence is one
CC   version of the IL-5 coding sequence shown in the specification
SQ   Sequence 405 BP; 131 A; 77 C; 94 G; 103 T; 0 U; 0 Other;

RESULT 6

Query Match 97.8%; Score 393; DB 4; Length 405;
Best Local Similarity 100.0%; Pred. No. 1.7e-193;
Matches 393; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1 ATGAGAAATGCTTCTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTCGCTTAGTTTCTGCCTTT  60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 ATGAGAAATGCTTCTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTCGCTTAGTTTCTGCCTTT  60

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGGTGGCAGAGACTTGACACTGCTCTCCACTCAT    120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTAGAAAATCCCATGAATAGACTGGGTGGCAGAGACTTGACACTGCTCTCCACTCAT    120

Qy  121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCCTGAAAATAAAATCAC  180
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCCTGAAAATAAAATCAC  180

Qy  181 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAACACAAAACTGCCCAC   240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAACACAAAACTGCCCAC   240

Qy  241 GGGGGAGGCCTGTGGATAAAACTATTCCCAAAACTTGTTCTTAATAAAAGAACACATAGAGCGC 300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 GGGGGAGGCCTGTGGATAAAACTATTCCCAAAACTTGTTCTTAATAAAAGAACACATAGAGCGC 300

Qy  301 CAAAAAAAAAGGTGTGCAGGAGGATGAGAGTGACAAAGTTCCTAGACTACCTGCAA      360
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301 CAAAAAAAAAGGTGTGCAGGAGGATGAGAGTGACAAAGTTCCTAGACTACCTGCAA      360

Qy  361 GTATTTCTTGGTGTGTAATAAACACACCGAGTGGACA                         393
        |||||||||||||||||||||||||||||||||||||
Db  361 GTATTTCTTGGTGTGTAATAAACACACCGAGTGGACA                         393
```

ID   AAZ55550 standard; cDNA; 345 BP.
XX
AC   AAZ55550;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine mature interleukin-5 (IL-5) cDNA.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999; 99WO-US011942.
XX
PR   29-MAY-1998; 98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58220.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 226-227; 264pp; English.
XX
CC   Sequences AAZ55546-Z55551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline interleukin-5 (IL-5), canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine Flt-3 ligand, canine IL-5, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and

```
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting.
XX
SQ   Sequence 345 BP; 68 A; 78 C; 79 G; 79 T; 0 U; 0 Other;

Query Match             85.8%;  Score 345;  DB 3;  Length 345;
Best Local Similarity   100.0%;  Pred. No. 1.4e-168;
Matches  345;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT 117
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT 60

Qy        118 CATCGAAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAAT 177
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CATCGAAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAAT 120

Qy        178 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGAGACACATTGAAGAACCAAAACTGCC 237
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGAGACACATTGAAGAACCAAAACTGCC 180

Qy        238 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAAGAACACATAGAG 297
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAAGAACACATAGAG 240

Qy        298 CGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 357
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 CGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300

Qy        358 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
              |||||||||||||||||||||||||||||||||||||||||||||
Db        301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345


RESULT 7
AA255551/c
ID  AA255551 standard; cDNA; 345 BP.
XX
AC  AA255551;
XX
DT  14-MAR-2000  (first entry)
XX
DE  Canine mature interleukin-5 (IL-5) cDNA complement.
XX
KW  Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW  immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS  Canis familiaris.
XX
PN  WO9961618-A2.
XX
PD  02-DEC-1999.
XX
PF  28-MAY-1999;  99WO-US011942.
XX
PR  29-MAY-1998;  98US-0087306P.
XX
PA  (HESK-) HESKA CORP.
XX
PI  Sim G, Yang S, Dreitz MJ, Wondering RS;
XX
DR  WPI; 2000-072623/06.
```

```
DR   P-PSDB; AAY58220.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 228; 264pp; English.
XX
CC   Sequences AA255546-255551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targetting
XX
SQ   Sequence 345 BP; 79 A; 78 C; 68 G; 120 T; 0 U; 0 Other;

Query Match             85.8%;  Score 345;  DB 3;  Length 345;
Best Local Similarity   100.0%;  Pred. No. 1.4e-168;
Matches  345;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT 117
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        345 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT 286

Qy        118 CATCGAAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAAT 177
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        285 CATCGAAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAAT 226

Qy        178 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGAGACACATTGAAGAACCAAAACTGCC 237
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        225 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGAGACACATTGAAGAACCAAAACTGCC 166

Qy        238 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAAGAACACATAGAG 297
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        165 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAAGAACACATAGAG 106

Qy        298 CGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 357
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        105 CGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 46

Qy        358 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
              |||||||||||||||||||||||||||||||||||||||||||||
Db         45 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 1


RESULT 8
AAF74306
ID  AAF74306 standard; DNA; 393 BP.
XX
AC  AAF74306;
XX
DT  04-MAY-2001  (first entry)
XX
DE  Canine interleukin-5 coding sequence #3.
XX
KW  Dog; interleukin-5; IL-5; allergy; cancer; gene therapy;
KW  inflammatory reaction; ds.
XX
OS  Canis sp.
XX
PN  WO200111049-A2.
```

XX
PD   15-FEB-2001.
XX
PF   09-AUG-2000; 2000WO-US0216651.
XX
PR   10-AUG-1999; 99US-00371615.
XX
PA   (IDEX-) IDEXX LAB INC.
XX
PI   Guo H, Lawton R, Mermer B, Aiyappa AP;
XX
DR   WPI; 2001-191542/19.
XX
PS   Claim 1; Page 35; 48pp; English.
XX
CC   Novel canine interleukin 5 polynucleotide and polypeptides are used for
CC   generating antibodies which are useful in treating allergies in dogs.
XX
PT   The present invention provides the protein and coding sequences of the
PT   canine interleukin-5 (IL-5) protein. This can be used to treat allergies,
CC   cancer and inflammatory reactions in dogs. The present sequence is one
CC   version of the IL-5 coding sequence shown in the specification
XX
SQ   Sequence 393 BP; 128 A; 82 C; 86 G; 97 T; 0 U; 0 Other;

Query Match   67.2%; Score 270; DB 4; Length 393;
Best Local Similarity 100.0%; Pred. No. 1.3e-129;
Matches 270; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    103 ACACTGCTCTCCACTCATCATGAACTTGGCTGATAGGCGATGGGAACCTGATGAATCCTACT 162
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 ACACTGCTCTCCACTCATCATGAACTTGGCTGATAGGCGATGGGAACCTGATGAATCCTACT 60

Qy    163 CCTGAAAAATAAAAATCACCAAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTG 222
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 CCTGAAAAATAAAAATCACCAAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTG 120

Qy    223 AAGAACCAAAACTGCCCACGGGGGAGGCGCTGTGGATAAAACTATTCCAAAACTGTTTAATA 282
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 AAGAACCAAAACTGCCCACGGGGGAGGCGCTGTGGATAAAACTATTCCAAAACTGTTTAATA 180

Qy    283 AAAGAACACATAGAGCGCCAAAAAAAGGTGTGTGCAGGAGGAGAGAGTGGAGTGGACAAAG 342
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 AAAGAACACATAGAGCGCCAAAAAAAGGTGTGTGCAGGAGGAGAGAGTGGAGTGGACAAAG 240

Qy    343 TTCCTAGACTACCTGCAAGTATTTCTTGGT 372
          ||||||||||||||||||||||||||||||
Db    241 TTCCTAGACTACCTGCAAGTATTTCTTGGT 270
```

RESULT 9
AAF74305
ID   AAF74305 standard; DNA; 252 BP.
XX
AC   AAF74305;
XX
DT   04-MAY-2001 (first entry)
XX
DE   Canine interleukin-5 coding sequence #2.
XX
KW   Dog; interleukin-5; IL-5; allergy; cancer; gene therapy;
KW   inflammatory reaction; ds.
XX
OS   Canis sp.
XX
PN   WO20011049-A2.
XX
PD   15-FEB-2001.
XX
PF   09-AUG-2000; 2000WO-US0216651.
XX
PR   10-AUG-1999; 99US-00371615.

PA   (IDEX-) IDEXX LAB INC.
XX
PI   Guo H, Lawton R, Mermer B, Aiyappa AP;
XX
DR   WPI; 2001-191542/19.
DR   P-PSDB; AAB72616.
XX
PS   Example 1; Fig 1; 48pp; English.
XX
CC   Novel canine interleukin 5 polynucleotide and polypeptides are used for
CC   generating antibodies which are useful in treating allergies in dogs.
XX
PT   The present invention provides the protein and coding sequences of the
PT   canine interleukin-5 (IL-5) protein. This can be used to treat allergies,
CC   cancer and inflammatory reactions in dogs. The present sequence is one
CC   version of the IL-5 coding sequence shown in the specification
XX
SQ   Sequence 252 BP; 69 A; 54 C; 60 G; 69 T; 0 U; 0 Other;

Query Match   62.7%; Score 252; DB 4; Length 252;
Best Local Similarity 100.0%; Pred. No. 2.8e-120;
Matches 252; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy      1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGCGCTTGCCTATGTTTCTGCGTTT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGCGCTTGCCTATGTTTCTGCGTTT 60

Qy     61 GCTGTAGAAAATCCCATGAATAGACTGGTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 GCTGTAGAAAATCCCATGAATAGACTGGTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy    121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGAATCCTACTCCTGAAAAATAAAAATCAC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGAATCCTACTCCTGAAAAATAAAAATCAC 180

Qy    181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240

Qy    241 GGGGAGGCTGTG 252
          ||||||||||||
Db    241 GGGGAGGCTGTG 252
```

RESULT 10
AAT50756
ID   AAT50756 standard; cDNA; 399 BP.
XX
AC   AAT50756;
XX
DT   17-OCT-2003 (revised)
DT   24-SEP-1997 (first entry)
XX
DE   Ovine IL-5 cDNA.
XX
KW   Cytokine; ovine; sheep; interleukin-5; interleukin-12; IL-5; IL-12;
KW   livestock; cow; stress; transport; vaccine adjuvant; veterinary; cancer;
KW   immunosuppression; allergy; reproductive system; growth; early maturity;
KW   antibody; diagnosis; immunopotentiator;
KW   early haematopoietic progenitor cell; cytotoxic cell; thymocyte;
KW   secretion; IgM; IgA; bacterial endotoxin; gamma-interferon; ss.
XX
OS   Ovis aries.
XX
PN   WO9700321-A1.
XX
PD   03-JAN-1997.
XX
PF   14-JUN-1996; 96WO-AU000360.
XX
PR   14-JUN-1995; 95AU-00003502.
PR   27-OCT-1995; 95AU-00006244.
XX

```
PA   (CSIR ) COMMONWEALTH SCI & IND RES ORG.
XX
PI   Seow H, Wood P;
XX
DR   WPI; 1997-077528/07.
DR   P-PSDB; AAW08479.
XX
PS   Claim 6; Page 41-42; 78pp; English.
XX
PT   Nucleic acid encoding ovine interleukin-5 or -12 - used as vaccine
     adjuvants and to treat or prevent microbial infections in livestock.
XX
CC   The sequences given in AAT50755-56 encode ovine interleukin-5 (IL-5).
CC   Ovine IL-5 or IL-12 are used to treat and/or prevent infections in
CC   livestock (esp. cows and sheep), particularly where the animals are
CC   stressed, e.g. during transport. IL-5 and IL-12 can also be used as
CC   adjuvants in vaccines for veterinary use (partic. weakly immunogenic
CC   subunit or synthetic peptide vaccines). They may also be used to treat
CC   cancer, immunosuppression and allergy, to enhance/suppress the
CC   reproductive system and to promote growth or early maturity. Optionally
CC   interleukin can be delivered from constructs or delivery cells and
CC   infection. The interleukins are immunopotentiators, especially IL-5
CC   antibodies are useful in enzyme immunoassays for rapid diagnosis of
CC   promotes growth of early haematopoietic progenitor cells and generation
CC   of cytotoxic cells from thymocytes, also it stimulates production and
CC   secretion of IgM and IgA (in synergism with bacterial endotoxin). IL-12
CC   induces production of gamma-interferon by, and proliferation of, T and NK
CC   cells and increases the (non-)specific cytolytic lymphocyte response. The
CC   genetic constructs can also be used for in vitro production of IL-5 or -
CC   12. (Updated on 17-OCT-2003 to standardise OS field)
XX
SQ   Sequence 399 BP; 130 A; 77 C; 93 G; 99 T; 0 U; 0 Other;

     Query Match    10.7%;  Score 43;  DB 2;  Length 399;
     Best Local Similarity   100.0%;  Pred. No. 9.9e-12;
     Matches   43;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy   74 CCATGAATAGAGACTGGTGGCAGAGACCTTGACACTGCTCTCCAC 116
         ||||||||||||||||||||||||||||||||||||||||||||||
Db   68 CCATGAATAGAGACTGGTGGCAGAGACCTTGACACTGCTCTCCAC 110

AC   AAT50755;
XX
DT   17-OCT-2003 (revised)
DT   24-SEP-1997 (first entry)
XX
DE   Ovine IL-5 gene.
XX
KW   Cytokine; ovine; sheep; interleukin-5; interleukin-12; IL-5; IL-12;
KW   livestock; cow; stress; transport; vaccine adjuvant; veterinary; cancer;
KW   immunosuppression; allergy; reproductive system; growth; early maturity;
KW   antibody; diagnosis; immunopotentiator;
KW   early haematopoietic progenitor cell; cytotoxic cell; thymocyte;
KW   secretion; IgM; IgA; bacterial endotoxin; gamma-interferon; ss.
XX
OS   Ovis aries.
XX
RESULT 11
AAT50755
ID   AAT50755 standard; DNA; 520 BP.
XX

FH   Key             Location/Qualifiers
FT   CDS             46..444
FT                   /*tag= a
FT                   /product= "Ovine IL-5"
FT   exon            46..183
FT                   /*tag= b
FT                   /number= 1
FT   exon            184..216
FT                   /*tag= c
FT                   /number= 2
FT   exon            217..345
```

```
FT   exon            346..480
FT                   /*tag= d
FT                   /number= 3
FT                   /*tag= e
FT                   /number= 4
XX
PN   WO9700321-A1.
XX
PD   03-JAN-1997.
XX
PF   14-JUN-1996; 96WO-AU000360.
XX
PR   14-JUN-1995; 95AU-00003502.
PR   27-OCT-1995; 95AU-00006244.
XX
PA   (CSIR ) COMMONWEALTH SCI & IND RES ORG.
XX
PI   Seow H, Wood P;
XX
DR   WPI; 1997-077528/07.
DR   P-PSDB; AAW08479.
XX
PS   Claim 6; Page 39-40; 78pp; English.
XX
PT   Nucleic acid encoding ovine interleukin-5 or -12 - used as vaccine
     adjuvants and to treat or prevent microbial infections in livestock.
XX
CC   The sequences given in AAT50755-56 encode ovine interleukin-5 (IL-5).
CC   Ovine IL-5 or IL-12 are used to treat and/or prevent infections in
CC   livestock (esp. cows and sheep), particularly where the animals are
CC   stressed, e.g. during transport. IL-5 and IL-12 can also be used as
CC   adjuvants in vaccines for veterinary use (partic. weakly immunogenic
CC   subunit or synthetic peptide vaccines). They may also be used to treat
CC   cancer, immunosuppression and allergy, to enhance/suppress the
CC   reproductive system and to promote growth or early maturity. Optionally
CC   interleukin can be delivered from constructs or delivery cells and
CC   infection. The interleukins are immunopotentiators, especially IL-5
CC   antibodies are useful in enzyme immunoassays for rapid diagnosis of
CC   promotes growth of early haematopoietic progenitor cells and generation
CC   of cytotoxic cells from thymocytes, also it stimulates production and
CC   secretion of IgM and IgA (in synergism with bacterial endotoxin). IL-12
CC   induces production of gamma-interferon by, and proliferation of, T and NK
CC   cancer, immunosuppression and allergy, to (non-)specific cytolytic lymphocyte response. The
CC   genetic constructs can also be used for in vitro production of IL-5 or -
CC   12. (Updated on 17-OCT-2003 to standardise OS field)
XX
SQ   Sequence 520 BP; 166 A; 99 C; 124 G; 131 T; 0 U; 0 Other;

     Query Match    10.7%;  Score 43;  DB 2;  Length 520;
     Best Local Similarity   100.0%;  Pred. No. 1e-11;
     Matches   43;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy    74 CCATGAATAGAGACTGGTGGCAGAGACCTTGACACTGCTCTCCAC 116
          ||||||||||||||||||||||||||||||||||||||||||||||
Db   113 CCATGAATAGAGACTGGTGGCAGAGACCTTGACACTGCTCTCCAC 155

RESULT 12
AAZ44265
ID   AAZ44265 standard; DNA; 838 BP.
XX
AC   AAZ44265;
XX
DT   31-MAR-2000 (first entry)
XX
DE   Porcine IL-5 DNA.
XX
KW   Pig; vaccine; cysticercosis; protective antigen; cC1; cC3; cC4;
KW   tenial cysticercus; gamma interferon; IFN-gamma; interleukin 5; IL-5; ss.
XX
OS   Sus scrofa.
XX
PN   CN1211339-A.
```

```
XX
PD   13-OCT-1999.
XX
DR   WPI; 2000-087904/08.
DR   99CN-0011347.
PR   29-JAN-1999;  99CN-0011347.
XX
PT   Nucleic acid vaccine for cysticercosis co-contracted by human and pig.
XX
PA   (UYTW-) UNIV NO 2 MILITARY MEDICAL PLA.
XX
PI   Sun S,  Dai J;
XX
PS   Claim 3; Page 9; 21pp; Chinese.
XX
CC   This invention describes a novel nucleic acid vaccine for preventing and
CC   curing human and pork cysticercosis. The invention involves the formation
CC   of a eukaryotic expression plasmid from fusion transcript expression unit
CC   consisting of three protective antigen genes (cC1, cC3 and cC4) of pig
CC   tenial cysticercus and coexpression unit of related cell factor gamma
CC   interferon (IFN-gamma) and pork interleukin 5 (IL-5)] genes. The
CC   production and purification process of said nucleic acid vaccine is
CC   simple and convenient, the physical and chemical properties of the
CC   vaccine are stable, and the vaccine is easy to store and transport, and
CC   possesses effective immunological protective function for human and pig
CC   cysticercosis. This sequence represents the pig IL-5 gene used in the
CC   method of the invention
XX
SQ   Sequence 838 BP; 280 A; 148 C; 171 G; 239 T; 0 U; 0 Other;

Qy   Best Local Similarity   10.2%;   Score 41;  DB 3;  Length 838;
     Matches  41;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;
     Query Match                      Pred. No. 1.1e-10;

     17  ATTTGAGTTTGCTAGCTCTTGGGGCTTGCCCTAYGTTTCTGCC  57
         ||||||||||||||||||||||||||||||| |||||||||||
Db   61  ATTTGAGTTTGCTAGCTCTTGGGGCTTGCCTAYGTTTCTGCC  101

RESULT 13
ID   AAQ57191 standard; mRNA; 27 BP.
XX
AC   AAQ57191;
XX
DT   25-MAR-2003  (revised)
DT   26-JUL-1994  (first entry)
XX
DE   Enzymatic RNA molecule IL-5 mRNA target sequence.
XX
KW   Interleukin-5; specific; cleavage; target RNA; protein; expression;
KW   inhibitor; inhibition; ribozyme; treatment; prophylaxis; prevention;
KW   psoriasis; asthma; inflammatory diseases; restenosis;
KW   cardiovascular condition; hypertension; arthritis; ss.
XX
OS   Synthetic.
XX
PN   WO9402595-A1.
XX
PD   03-FEB-1994.
XX
PF   02-JUL-1993;  93WO-US006316.
XX
PR   17-JUL-1992;  92US-0091676.
PR   07-DEC-1992;  92US-00987132.
PR   07-DEC-1992;  92US-0098848.
PR   07-DEC-1992;  92US-0099849.
PR   19-JAN-1993;  93US-0008895.
XX
PA   (RIBO-) RIBOZYME PHARM INC.
XX

PI   Sullivan SM,  Draper KG;
XX
DR   WPI; 1994-048853/06.
XX
PT   Enzymatic RNA molecules which cleave mRNA - used to treat or prevent
PT   inflammatory, arthritic, stenotic or cardiovascular diseases or
PT   conditions.
XX
PS   Claim 3; Page 17; 65pp; English.
XX
CC   This is an IL-5 mRNA target sequence (nucleotide no. 61) of an enzymatic
CC   RNA molecule (ribozyme) which cleaves mRNA associated with the
CC   development or maintenance of a psoriatic or asthmatic condition. The
CC   concn. of the ribozyme necessary to effect a therapeutic treatment is
CC   lower than that of an antisense oligonucleotide and the specificity of
CC   action is higher. (Updated on 25-MAR-2003 to correct PN field.)
XX
SQ   Sequence 27 BP; 4 A; 4 C; 8 G; 11 T; 0 U; 0 Other;

Qy   Best Local Similarity   5.5%;   Score 22;  DB 2;  Length 27;
     Matches  22;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;
     Query Match                     Pred. No. 0.75;

     17  ATTTGAGTTTGCTAGCTCTTGG  38
         ||||||||||||||||||||||
Db    1  ATTTGAGTTTGCTAGCTCTTGG  22

RESULT 14
ID   AAX54641/c standard; DNA; 89 BP.
XX
AC   AAX54641;
XX
DT   05-JUL-1999  (first entry)
XX
DE   Human IL-5 antisense oligonucleotide fragment.
XX
KW   Antisense oligonucleotide; multiple target; antisense treatment;
KW   impaired respiration; inflammation; lung disease;
KW   pulmonary vasoconstriction; inflammation; allergic rhinitis;
KW   acute asthma; allergy; asthma; impeded respiration;
KW   respiratory distress syndrome; pain; cystic fibrosis;
KW   chronic obstructive pulmonary disease; leukemia; lymphoma; carcinoma;
KW   pulmonary hypertension; pulmonary vasoconstriction; emphysema;
KW   colon cancer; breast cancer; lung cancer; pancreatic cancer;
KW   hepatocellular carcinoma; kidney cancer; melanoma; hepatic metastasis;
KW   prostate cancer; ss.
XX
OS   Synthetic.
XX
PN   WO9913886-A1.
XX
PD   25-MAR-1999.
XX
PF   17-SEP-1998;  98WO-US019419.
XX
PR   17-SEP-1997;  97US-0059160P.
PR   09-JUN-1998;  98US-00093972.
XX
PA   (UYEC-) UNIV EAST CAROLINA.
XX
PI   Nyce JW;
XX
DR   WPI; 1999-229400/19.
XX
PT   New antisense oligonucleotides used in treatment of, e.g. pulmonary
PT   vasoconstriction.
XX
PS   Disclosure; Page 49; 120pp; English.
XX
CC   The specification describes antisense oligonucleotides (AAX52869-X55271)
CC   directed against at least 2 mRNAs selected from target genes, coding and
```

Left page

```
CC   non-coding regions of RNAs corresponding to target genes, gene initiation
CC   codons, genomic flanking regions, intron-exon borders, the 5'-end, the 3'
CC   -end and the juxta-section between coding and non-coding regions and all
CC   segments of RNAs encoding proteins associated with one or more diseases,
CC   conditions or mixtures. The antisense oligonucleotides may be derived
CC   from sequences AaX55272-74. These multiple target oligonucleotides
CC   (specifically AaX55180-271) can be used for the antisense treatment of
CC   diseases and conditions. Typical diseases and conditions are those
CC   associated with impaired respiration and inflammation, including lung
CC   diseases, pulmonary vasoconstriction, inflammation, allergic rhinitis,
CC   acute asthma, allergies, asthma, impeded respiration, respiratory
CC   distress syndrome, pain, cystic fibrosis, pulmonary hypertension,
CC   pulmonary vasoconstriction, emphysema, chronic obstructive pulmonary
CC   disease (COPD), and cancers such as leukemias, lymphomas, carcinomas e.g.
CC   colon cancer, breast cancer, lung cancer, pancreatic cancer,
CC   hepatocellular carcinoma, kidney cancer, melanoma, hepatic metastases, as
CC   well as all types of cancers which may metastasize or have metastasized
CC   to the lungs, including breast and prostate cancer
XX
SQ   Sequence 89 BP; 25 A; 20 C; 25 G; 18 T; 0 U; 1 Other;

Qy           17 ATTTGAGTTTGCTAGCTCTTGG 38
                |||||||||||||||||||||||
Db           61 ATTTGAGTTTGCTAGCTCTTGG 40

Query Match             100.0%;  Score 22;  DB 2;  Length 89;
Best Local Similarity   100.0%;
Matches  22;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;
Pred. No. 0.77;

RESULT 15

ID   AAA34088/c  standard; DNA; 89 BP.
XX
AC   AAA34088;
XX
DT   28-JUL-2000  (first entry)
XX
DE   Human adenosine receptor related polynucleotide SEQ ID NO:1777.
XX
KW   Human; adenosine receptor; low adenosine antisense oligonucleotide;
KW   phosphorothioate; impaired respiration; inflammation; allergy;
KW   allergic disease; bronchoconstriction; inhibitor; antiinflammatory;
KW   antiallergic; antiasthmatic; cytostatic; analgesic; impaired airway;
KW   lung disease; ischaemic condition; pulmonary vasoconstriction; asthma;
KW   respiratory distress syndrome; pain; cystic fibrosis; emphysema;
KW   pulmonary hypertension; chronic obstructive pulmonary disease; COPD;
KW   cancer; leukaemia; lymphoma; carcinoma; metastasis; SS.
XX
OS   Homo sapiens.
XX
PN   WO2000009525-A2.
XX
PD   24-FEB-2000.
XX
PF   03-AUG-1999;   99WO-US017712.
XX
PR   03-AUG-1998;   98US-0095212P.
XX
PA   (UYEC-) UNIV EAST CAROLINA.
XX
PI   Nyce JW;
XX
DR   WPI; 2000-205971/18.
XX
PT   New antisense oligonucleotides useful for treating e.g. pulmonary
PT   vasoconstriction, inflammation, allergies, asthma, hypertension,
PT   bronchitis, emphysema, respiratory distress syndrome, ischemia or
PT   cancers.
XX
PS   Disclosure; Page 486; 1343pp; English.
XX
CC   The present invention describes a new composition comprising an antisense
```

Right page

```
CC   oligonucleotide (ON) with low adenosine (up to 15%), which targets
CC   nucleic acids involved in bronchoconstriction, allergies, and/or
CC   inflammation. The ON can have antiinflammatory, antiallergic,
CC   antiasthmatic, cytostatic and analgesic activities. The compositions are
CC   useful for the treatment of diseases associated with inflammation,
CC   impaired airways, including lung disease and diseases whose secondary
CC   effects afflict the lungs of a subject. They can be used for treating
CC   e.g. ischaemic conditions, pulmonary vasoconstriction, allergies, asthma,
CC   impeded respiration, respiratory distress syndrome, pain, cystic
CC   fibrosis, pulmonary hypertension, emphysema, chronic obstructive
CC   pulmonary disease (COPD), and cancers which may metastasise to the lungs, including
CC   breast and prostate cancer. The reduction of the adenosine content of the
CC   carcinomas, and cancers such as leukaemias, lymphomas,
CC   ONs reduces side effects. The A-containing ONs break down with the
CC   release of deoxyadenosine which activates adenosine receptors causing
CC   bronchoconstriction and inflammation. AAA32313 to AAA35312 represent the
CC   nucleotide sequences given in the sequence listing from the present
CC   invention, which correspond to SEQ ID NO:1 to 2815, and then the last 185
CC   sequences are also called SEQ ID NO:1 to 185, but the sequences differ
CC   from the previously named sequences. SEQ ID NO:11 to 1680 (AAA32323 to
CC   AAA33992) are specifically claimed ONs from the present invention. N.B.
CC   Sequences given in the disclosure of the present invention do not match
CC   up with their corresponding SEQ ID NO: sequences given in the sequence
CC   listing
XX
SQ   Sequence 89 BP; 25 A; 20 C; 25 G; 18 T; 0 U; 1 Other;

Qy           17 ATTTGAGTTTGCTAGCTCTTGG 38
                |||||||||||||||||||||||
Db           61 ATTTGAGTTTGCTAGCTCTTGG 40

Query Match             100.0%;  Score 22;  DB 3;  Length 89;
Best Local Similarity   100.0%;
Matches  22;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;
Pred. No. 0.77;

Search completed: August  8, 2005, 16:37:39
Job time : 269.467 secs
```

OM nucleic - nucleic search, using sw model

                    GenCore version 5.1.6
                    Copyright (c) 1993 - 2005 Compugen Ltd.

Run on: August 8, 2005, 01:09:58 ; Search time 81.8667 seconds
                                       (without alignments)
                                       8034.812 Million cell updates/sec

Title: US-10-787-382-7
Perfect score: 402
Sequence: 1 atgagaatgcttctgaattt..........ccgagtggacaccggaagt 402

Scoring table: OLIGO_NUC
Scoring table: Gapop 60.0 , Gapext 60.0

Searched: 1202784 seqs, 81818359 residues

Word size :   0

Total number of hits satisfying chosen parameters: 2405568

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database :   Issued_Patents_NA:*
           1: /cgn2_6/ptodata/1/ina/5A_COMB.seq:*
           2: /cgn2_6/ptodata/1/ina/5B_COMB.seq:*
           3: /cgn2_6/ptodata/1/ina/6A_COMB.seq:*
           4: /cgn2_6/ptodata/1/ina/6B_COMB.seq:*
           5: /cgn2_6/ptodata/1/ina/PCTUS_COMB.seq:*
           6: /cgn2_6/ptodata/1/ina/backfiles1.seq:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	402	100.0	402	4	US-09-322-409-83	Sequence 83, Appl
2	402	100.0	402	4	US-09-322-409-84	Sequence 84, Appl
3	402	100.0	402	4	US-09-451-527-83	Sequence 83, Appl
4	402	100.0	402	4	US-09-451-527-84	Sequence 84, Appl
5	402	100.0	610	4	US-09-322-409-80	Sequence 80, Appl
6	402	100.0	610	4	US-09-451-527-82	Sequence 82, Appl
7	402	100.0	610	4	US-09-451-527-80	Sequence 80, Appl
8	402	100.0	610	4	US-09-451-527-82	Sequence 82, Appl
c 9	393	97.8	405	4	US-09-371-615A-1	Sequence 1, Appli
c 10	345	85.8	345	4	US-09-322-409-85	Sequence 85, Appl
c 11	345	85.8	345	4	US-09-322-409-87	Sequence 87, Appl
c 12	345	85.8	345	4	US-09-451-527-85	Sequence 85, Appl
c 13	345	85.8	345	4	US-09-451-527-87	Sequence 87, Appl
14	22	5.5	27	4	US-08-434-503-41	Sequence 41, Appl
15	22	5.5	47	1	US-08-466-852-2	Sequence 2, Appli
c 16	22	5.5	816	4	US-09-079-839-2	Sequence 2, Appl
c 17	22	5.5	816	4	US-09-023-655-1236	Sequence 1236, Ap
18	22	5.5	3230	3	US-09-280-799-78	Sequence 78, Appl
19	22	5.5	3230	6	5324640-1	Patent No. 5324640
20	22	5.5	3230	6	5324640-1	Patent No. 5324640
21	22	5.5	36	4	US-09-322-409-137	Sequence 137, App
22	21	5.2	36	4	US-09-451-527-137	Sequence 137, App
23	21	5.2	375	4	US-09-556-818-33	Sequence 33, Appl
24	21	5.2	375	4	US-09-556-818-37	Sequence 37, Appl
25	21	5.2	377	4	US-09-180-864-1	Sequence 1, Appl
26	21	5.2	381	4	US-09-556-818-27	Sequence 27, Appl
27	21	5.2	393	4	US-09-556-818-31	Sequence 31, Appl
28	21	5.2	393	4	US-09-556-818-41	Sequence 41, Appl
29	21	5.2	399	4	US-09-556-818-39	Sequence 39, Appl
30	21	5.2	444	4	US-09-556-818-43	Sequence 43, Appl
31	19	4.7	29	5	PCT-US94-10957-16	Sequence 16, Appl
32	19	4.7	68444	4	US-09-949-016-13968	Sequence 13968, A
c 33	18	4.5	21	3	US-08-621-841-48	Sequence 48, Appl
c 34	18	4.5	32	4	US-09-270-767-355	Sequence 355, App
c 35	18	4.5	32	4	US-09-322-409-138	Sequence 138, Appl
c 36	18	4.5	601	4	US-09-451-527-138	Sequence 138, App
c 37	18	4.5	601	4	US-09-949-016-63405	Sequence 63405, A
c 38	18	4.5	601	4	US-09-949-016-74518	Sequence 74518, A
c 39	18	4.5	601	4	US-09-949-016-74519	Sequence 74519, A
c 40	18	4.5	782	4	US-09-949-016-74520	Sequence 74520, A
41	18	4.5	782	4	US-09-949-016-15637	Sequence 15637, A
42	18	4.5	10818	4	US-09-949-016-13583	Sequence 13583, A
43	18	4.5	83428	4	US-09-949-016-13610	Sequence 13610, A
44	18	4.5	92334	4	US-09-949-016-13920	Sequence 13920, A
45	18	4.5	92363	4	US-09-949-016-12146	Sequence 12146, A

ALIGNMENTS

RESULT 1
US-09-322-409-83

Sequence 83, Application US/0932409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 83
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-322-409-83

Query Match   100.0%;   Score 402;   DB 4;   Length 402;
Best Local Similarity   100.0%;   Pred. No. 2.3e-193;
Matches 402;   Conservative   0;   Mismatches 0;   Indels 0;   Gaps 0;

```
Qy        1 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTCGCCTATGTTTCTGCCTTT 60
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        1 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTCGCCTATGTTTCTGCCTTT 60

Qy       61 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGAGACCTTGACACTGCTTCTCCACTCAT 120
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       61 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGAGACCTTGACACTGCTTCTCCACTCAT 120

Qy      121 CGAACTTCGCTGATAGGCGGATGGGAACCTGATCATTCCTACTCCTGAAAATAAAAAATCAC 180
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      121 CGAACTTCGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAATCAC 180

Qy      181 CAACTGTGCATTAAAGAAGTTTTCAGGGTATAGACACATTGAAGAACAACAACTGCCCAC 240
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACAACAACTGCCCAC 240

Qy      241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACACATAGAGCGC 300
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACACATAGAGCGC 300

Qy      301 CAAAAAAAGGTGTGCAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      301 CAAAAAAAGGTGTGCAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
```

```
Db  301 CAAAAAAAAGGTGTCCAGGAGAAGAAGAAGATGGAGAGTGAGACAAAAGTTCCTAGACTACCTGCAA 360

Qy  361 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 402

Db  361 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 402
```

RESULT 2
US-09-322-409-84/c
; Sequence 84, Application US/09322409
; Patent No. 6471957,
; GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shumin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THERBOF
;   FILE REFERENCE: IM-2-C1
;   CURRENT APPLICATION NUMBER: US/09/322,409
;   CURRENT FILING DATE: 1999-05-28
;   EARLIER APPLICATION NUMBER: 60/087,306
;   EARLIER FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 154
;   SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 84
;   LENGTH: 402
;   TYPE: DNA
;   ORGANISM: Canis familiaris
US-09-322-409-84

  Query Match   100.0%;   Score 402; DB 4;   Length 402;
  Best Local Similarity   100.0%;   Pred. No. 2.3e-193;
  Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTACTTCTTGGGGGGTGCCTATGTTTCTGCCTTT 60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTACTTCTTGGGGGGTGCCTATGTTTCTGCCTTT 60

Qy   61 GCTGTAGAAAAATCCCATGAATAGACTGGTGGCCAGAGAGACCTTGACACTGCTCTCCACTCAT 120
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTAGAAAAATCCCATGAATAGACTGGTGGCCAGAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy 121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCCTGAAAAATAAAAAATCAC 180
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCCTGAAAAATAAAAAATCAC 180

Qy 181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240

Qy 241 GGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTTCTTTAATAAAAGAACACATAGAGCGC 300
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 241 GGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTTCTTTAATAAAAGAACACATAGAGCGC 300

Qy 301 CAAAAAAAAGGTGTCCAGGAGAAGAAGAAGATGGAGAGTGAGACAAAAGTTCCTAGACTACCTGCAA 360
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 301 CAAAAAAAAGGTGTCCAGGAGAAGAAGAAGATGGAGAGTGAGACAAAAGTTCCTAGACTACCTGCAA 360

Qy 361 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 402
         |||||||||||||||||||||||||||||||||||||||||||
Db 361 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 402
```

RESULT 3
US-09-451-527-83
; Sequence 83, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shumin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.

RESULT 4
US-09-451-527-84/c
; Sequence 84, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shumin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THERBOF
;   FILE REFERENCE: IM-2-C2
;   CURRENT APPLICATION NUMBER: US/09/451,527
;   CURRENT FILING DATE: 1999-12-01
;   EARLIER APPLICATION NUMBER: 09/322,409
;   EARLIER FILING DATE: 1999-05-28
;   EARLIER APPLICATION NUMBER: 60/087,306
;   EARLIER FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 174
;   SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 84
;   LENGTH: 402
;   TYPE: DNA
;   ORGANISM: Canis familiaris
US-09-451-527-83

  Query Match   100.0%;   Score 402; DB 4;   Length 402;
  Best Local Similarity   100.0%;   Pred. No. 2.3e-193;
  Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTACTTCTTGGGGGGTGCCTATGTTTCTGCCTTT 60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTACTTCTTGGGGGGTGCCTATGTTTCTGCCTTT 60

Qy   61 GCTGTAGAAAAATCCCATGAATAGACTGGTGGCCAGAGAGACCTTGACACTGCTCTCCACTCAT 120
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTAGAAAAATCCCATGAATAGACTGGTGGCCAGAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy  121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCCTGAAAAATAAAAAATCAC 180
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCCTGAAAAATAAAAAATCAC 180

Qy  181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240

Qy  241 GGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTTCTTTAATAAAAGAACACATAGAGCGC 300
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 GGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTTCTTTAATAAAAGAACACATAGAGCGC 300

Qy  301 CAAAAAAAAGGTGTCCAGGAGAAGAAGAAGATGGAGAGTGAGACAAAAGTTCCTAGACTACCTGCAA 360
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301 CAAAAAAAAGGTGTCCAGGAGAAGAAGAAGATGGAGAGTGAGACAAAAGTTCCTAGACTACCTGCAA 360

Qy  361 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 402
         |||||||||||||||||||||||||||||||||||||||||||
Db  361 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 402
```

;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THERBOF
;   FILE REFERENCE: IM-2-C2
;   CURRENT APPLICATION NUMBER: US/09/451,527
;   CURRENT FILING DATE: 1999-12-01
;   EARLIER APPLICATION NUMBER: 09/322,409
;   EARLIER FILING DATE: 1999-05-28
;   EARLIER APPLICATION NUMBER: 60/087,306
;   EARLIER FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 174
;   SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 84
;   LENGTH: 402
;   TYPE: DNA

```
; ORGANISM: Canis familiaris
US-09-451-527-84

Query Match        100.0%;  Score 402;  DB 4;  Length 402;
Best Local Similarity  100.0%;  Pred. No. 2.3e-193;
Matches  402;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy         1 ATGAGAAATGCTTCTGAATTTGAGTTTTGCTAGCTCTTGGGGTCGCCTATGTTTTCTGCCTTT  60
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       402 ATGAGAAATGCTTCTGAATTTGAGTTTTGCTAGCTCTTGGGGTCGCCTATGTTTTCTGCCTTT  343

Qy        61 GCTGTAGAAAATCCCATGAATAGACTGGTGTGGCGAGAGACCTTGACACTGCTCTCCACTCAT  120
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       342 GCTGTAGAAAATCCCATGAATAGACTGGTGTGGCGAGAGACCTTGACACTGCTCTCCACTCAT  283

Qy       121 CGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC  180
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       282 CGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC  223

Qy       181 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACAACATTGAAGAACCAAAACTGCCCAC  240
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       222 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACAACATTGAAGAACCAAAACTGCCCAC  163

Qy       241 GGGGAGGAGGCTGTGGGATAAACTATTCCAAAAACTTGTCTCTTTAATAAAAGAACACATAGAGCGC  300
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       162 GGGGAGGAGGCTGTGGGATAAACTATTCCAAAAACTTGTCTCTTTAATAAAAGAACACATAGAGCGC  103

Qy       301 CAAAAAAAAGGTGTGCAGGAGAGAAGATGGGACAAAGTTCCTAGACTACCTGCAA  360
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       102 CAAAAAAAAGGTGTGCAGGAGAGAAGATGGGACAAAGTTCCTAGACTACCTGCAA  43

Qy       361 GTATTTCTTGGTGTGTAATAAAACACCGAGTGGGACACCCGGAAAGT  402
             |||||||||||||||||||||||||||||||||||||||||||||||
Db        42 GTATTTCTTGGTGTGTAATAAAACACCGAGTGGGACACCCGGAAAGT  1
```

```
RESULT 5
US-09-322-409-80
; Sequence 80, Application US/0932 2409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
  TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 80
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (29)..(430)
US-09-322-409-80

Query Match        100.0%;  Score 402;  DB 4;  Length 610;
Best Local Similarity  100.0%;  Pred. No. 2.3e-193;
Matches  402;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy         1 ATGAGAAATGCTTCTGAATTTGAGTTTTGCTAGCTCTTGGGGTCGCCTATGTTTTCTGCCTTT  60
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        29 ATGAGAAATGCTTCTGAATTTGAGTTTTGCTAGCTCTTGGGGTCGCCTATGTTTTCTGCCTTT  88

Qy        61 GCTGTAGAAAATCCCATGAATAGACTGGTGTGGCGAGAGACCTTGACACTGCTCTCCACTCAT  120
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        89 GCTGTAGAAAATCCCATGAATAGACTGGTGTGGCGAGAGACCTTGACACTGCTCTCCACTCAT  148
```

```
RESULT 6
US-09-322-409-82/c
; Sequence 82, Application US/0932 2409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
  TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 82
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-322-409-82

Query Match        100.0%;  Score 402;  DB 4;  Length 610;
Best Local Similarity  100.0%;  Pred. No. 2.3e-193;
Matches  402;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy         1 ATGAGAAATGCTTCTGAATTTGAGTTTTGCTAGCTCTTGGGGTCGCCTATGTTTTCTGCCTTT  60
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       582 ATGAGAAATGCTTCTGAATTTGAGTTTTGCTAGCTCTTGGGGTCGCCTATGTTTTCTGCCTTT  523

Qy        61 GCTGTAGAAAATCCCATGAATAGACTGGTGTGGCGAGAGACCTTGACACTGCTCTCCACTCAT  120
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       522 GCTGTAGAAAATCCCATGAATAGACTGGTGTGGCGAGAGACCTTGACACTGCTCTCCACTCAT  463

Qy       121 CGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC  180
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       462 CGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC  403

Qy       181 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACAACATTGAAGAACCAAAACTGCCCAC  240
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       402 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACAACATTGAAGAACCAAAACTGCCCAC  343

Qy       241 GGGGAGGAGGCTGTGGGATAAACTATTCCAAAAACTTGTCTCTTTAATAAAAGAACACATAGAGCGC  300
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       342 GGGGAGGAGGCTGTGGGATAAACTATTCCAAAAACTTGTCTCTTTAATAAAAGAACACATAGAGCGC  283

Qy       301 CAAAAAAAAGGTGTGCAGGAGAGAAGATGGGACAAAGTTCCTAGACTACCTGCAA  360
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       282 CAAAAAAAAGGTGTGCAGGAGAGAAGATGGGACAAAGTTCCTAGACTACCTGCAA  283
```

RESULT 7
US-09-451-527-80
; Sequence 80, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shunin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C2
;   CURRENT APPLICATION NUMBER: US/09/451,527
;   CURRENT FILING DATE: 1999-12-01
;   EARLIER APPLICATION NUMBER: 09/322,409
;   EARLIER FILING DATE: 1999-05-28
;   EARLIER APPLICATION NUMBER: 60/087,306
;   EARLIER FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 174
;   SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 80
;   LENGTH: 610
;   TYPE: DNA
;   ORGANISM: Canis familiaris
;   FEATURE:
;   NAME/KEY: CDS
;   LOCATION: (29)...(430)
US-09-451-527-80

Query Match   100.0%; Score 402; DB 4; Length 610;
Best Local Similarity   100.0%; Pred. No. 2.3e-193;
Matches 402; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

```
Qy          1 ATGAGAATGCTTCTCGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         29 ATGAGAATGCTTCTCGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 88

Qy         61 GCTGTAGAAAATCCCATGAATAGACTCGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         89 GCTGTAGAAAATCCCATGAATAGACTCGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 148

Qy        121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 180
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        149 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 208

Qy        181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        209 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 268

Qy        241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTTCTTTAATAAAAGAACACAATAGAGCGC 300
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        269 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTTCTTTAATAAAAGAACACAATAGAGCGC 328

Qy        301 CAAAAAAAAAGGTGTGCAGGAGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        329 CAAAAAAAAAGGTGTGCAGGAGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388

Qy        361 GTATTTCTTGGTGTTAATAAACACCCGAGTGGACACCCGGAAAGT 402
              |||||||||||||||||||||||||||||||||||||||||||
Db        389 GTATTTCTTGGTGTTAATAAACACCCGAGTGGACACCCGGAAAGT 430
```

RESULT 8
US-09-451-527-82/c
; Sequence 82, Application US/09451527
; Patent No. 6482403

; GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shunin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C2
;   CURRENT APPLICATION NUMBER: US/09/451,527
;   CURRENT FILING DATE: 1999-12-01
;   EARLIER APPLICATION NUMBER: 09/322,409
;   EARLIER FILING DATE: 1999-05-28
;   EARLIER APPLICATION NUMBER: 60/087,306
;   EARLIER FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 174
;   SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 82
;   LENGTH: 610
;   TYPE: DNA
;   ORGANISM: Canis familiaris
US-09-451-527-82

Query Match   100.0%; Score 402; DB 4; Length 610;
Best Local Similarity   100.0%; Pred. No. 2.3e-193;
Matches 402; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

```
Qy          1 ATGAGAATGCTTCTCGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        582 ATGAGAATGCTTCTCGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 523

Qy         61 GCTGTAGAAAATCCCATGAATAGACTCGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        522 GCTGTAGAAAATCCCATGAATAGACTCGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 463

Qy        121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 180
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        462 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 403

Qy        181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        402 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCAC 343

Qy        241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTTCTTTAATAAAAGAACACAATAGAGCGC 300
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        342 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTTCTTTAATAAAAGAACACAATAGAGCGC 283

Qy        301 CAAAAAAAAAGGTGTGCAGGAGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        282 CAAAAAAAAAGGTGTGCAGGAGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 223

Qy        361 GTATTTCTTGGTGTTAATAAACACCCGAGTGGACACCCGGAAAGT 402
              |||||||||||||||||||||||||||||||||||||||||||
Db        222 GTATTTCTTGGTGTTAATAAACACCCGAGTGGACACCCGGAAAGT 181
```

RESULT 9
US-09-371-615A-1
; Sequence 1, Application US/09371615A
; Patent No. 6537781
; GENERAL INFORMATION:
;   APPLICANT: IDEXX LABORATORIES
;   TITLE OF INVENTION: METHODS AND COMPOSITIONS CONCERNING
;   TITLE OF INVENTION: CANINE INTERLEUKIN 5
;   FILE REFERENCE: 0360400170OUS00
;   CURRENT APPLICATION NUMBER: US/09/371,615A
;   CURRENT FILING DATE: 1999-08-10
;   NUMBER OF SEQ ID NOS: 8
;   SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 1
;   LENGTH: 405
;   TYPE: DNA
;   ORGANISM: Canis familiaris
US-09-371-615A-1

RESULT 10
US-09-322-409-85
; Sequence 85, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 85
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(345)
US-09-322-409-85

Query Match   85.8%;   Score 345;   DB 4;   Length 345;
Best Local Similarity   100.0%;   Pred. No. 1.5e-164;
Matches 345;   Conservative 0;   Mismatches 0;   Indels 0;   Gaps 0;

```
Qy     58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT 117
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT 60

Qy    118 CATCGAACTTGGCTGATCAGTTCTTACTCCTGAAAATAAAAT 177
          |||||||||||||||||||||||||||||||||||||||||||
Db     61 CATCGAACTTGGCTGATGAGGGCCGATGGGGAACCTGATGATTCTTAATAAAAGAGAACACATAGAG 120
```

RESULT 11
US-09-322-409-87/c
; Sequence 87, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 87
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-322-409-87

Query Match   85.8%;   Score 345;   DB 4;   Length 345;
Best Local Similarity   100.0%;   Pred. No. 1.5e-164;
Matches 345;   Conservative 0;   Mismatches 0;   Indels 0;   Gaps 0;

```
Qy     58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT 117
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT 60
```

RESULT 12
US-09-451-527-85
; Sequence 85, Application US/09451527

```
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT:
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 85
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(345)

US-09-451-527-85

  Query Match             85.8%;  Score 345;  DB 4;  Length 345;
  Best Local Similarity   100.0%;  Pred. No. 1.5e-164;
  Matches 345;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy         58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTTCTCCACT 117
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTTCTCCACT 60

Qy        118 CATCGGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 177
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CATCGGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120

Qy        178 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAGACCAAAACTGCC 237
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAGACCAAAACTGCC 180

Qy        238 CACGGGGGAGGCGTGGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 297
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 CACGGGGGAGGCGTGGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240

Qy        298 CGCCAAAAAAAAGGTGTGCAGGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 357
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 CGCCAAAAAAAAGGTGTGCAGGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300

Qy        358 CAAGTATTTCTTGGGTGTAATAAACACCCGAGTGGGACACCCGAAAGT 402
              ||||||||||||||||||||||||||||||||||||||||||||||
Db        301 CAAGTATTTCTTGGGTGTAATAAACACCCGAGTGGGACACCCGAAAGT 345
```

```
RESULT 13
US-09-451-527-87/c
; Sequence 87, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT:
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
```

```
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 87
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris

US-09-451-527-87

  Query Match             85.8%;  Score 345;  DB 4;  Length 345;
  Best Local Similarity   100.0%;  Pred. No. 1.5e-164;
  Matches 345;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy         58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTTCTCCACT 117
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        345 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTTCTCCACT 286

Qy        118 CATCGGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 177
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        285 CATCGGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 226

Qy        178 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAGACCAAAACTGCC 237
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        225 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAGACCAAAACTGCC 166

Qy        238 CACGGGGGAGGCGTGGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 297
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        165 CACGGGGGAGGCGTGGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 106

Qy        298 CGCCAAAAAAAAGGTGTGCAGGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 357
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        105 CGCCAAAAAAAAGGTGTGCAGGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 46

Qy        358 CAAGTATTTCTTGGGTGTAATAAACACCCGAGTGGGACACCCGAAAGT 402
              ||||||||||||||||||||||||||||||||||||||||||||||
Db         45 CAAGTATTTCTTGGGTGTAATAAACACCCGAGTGGGACACCCGAAAGT 1
```

```
RESULT 14
US-08-434-503-41
; Sequence 41, Application US/08434503
; Patent No. 5616490
; GENERAL INFORMATION:
; APPLICANT: Sean M. Sullivan
; APPLICANT: Kenneth G. Draper
; TITLE OF INVENTION: METHOD AND REAGENT FOR
; TITLE OF INVENTION: TREATMENT OF INFLAMMATORY
; TITLE OF INVENTION: DISEASE
; NUMBER OF SEQUENCES: 54
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lyon & Lyon
; STREET: 611 West Sixth Street
; CITY: Los Angeles
; STATE: California
; COUNTRY: USA
; ZIP: 90017
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5" Diskette, 1.44 Mb storage
; COMPUTER: IBM Compatible
; OPERATING SYSTEM: IBM MS-DOS (Version 5.0)
; SOFTWARE: WordPerfect (Version 5.1)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/434,503
; FILING DATE: 04-MAY-1995
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/008,895
; FILING DATE: 19-JAN-1993
; APPLICATION NUMBER: 07/989,849
; FILING DATE: December 7, 1992
; ATTORNEY/AGENT INFORMATION:
; NAME: Warburg, Richard J.
; REGISTRATION NUMBER: 32,327
; REFERENCE/DOCKET NUMBER: 200/276
```

us-10-787-382-7.oligo.rni

```
;  TELECOMMUNICATION INFORMATION:
;     TELEPHONE:  (213) 489-1600
;     TELEFAX:  (213) 955-0440
;     TELEX:  67-3510
;  INFORMATION FOR SEQ ID NO: 41:
;     SEQUENCE CHARACTERISTICS:
;        LENGTH:  27
;        TYPE:  nucleic acid
;        STRANDEDNESS:  single
;        TOPOLOGY:  linear
US-08-434-503-41

Qy          17 ATTTGAGTTTGCTAGCTCTTGG 38
               |:::||||:::||||:|:||:||
Db           1 AUUUGAGUUGCUAGCUCUUGG 22

Query Match             5.5%;  Score 22;  DB 1;  Length 27;
Best Local Similarity  54.5%;  Pred. No. 0.32;
Matches   12;  Conservative  10;  Mismatches   0;  Indels   0;  Gaps   0;
```

```
RESULT 15
US-08-466-852-2/c
; Sequence 2, Application US/08466852
; Patent No. 5681936
; GENERAL INFORMATION:
;  APPLICANT:
;  TITLE OF INVENTION:  A SINGLE STEP PURIFICATION OF
;  TITLE OF INVENTION:  RECOMBINANT HUMAN INTERLEUKIN-5
;  NUMBER OF SEQUENCES:  4
;  CORRESPONDENCE ADDRESS:
;     ADDRESSEE:  Merck & Co., Inc.
;     STREET:  126 East Lincoln Avenue
;     CITY:  Rahway
;     STATE:  New Jersey
;     COUNTRY:  USA
;     ZIP:  07065-0907
;  COMPUTER READABLE FORM:
;     MEDIUM TYPE:  Diskette, 3.5 in, 1.4kb
;     COMPUTER:  Apple Macintosh
;     OPERATING SYSTEM:  System 7.0.1
;     SOFTWARE:  Microsoft Word 5.1
;  CURRENT APPLICATION DATA:
;     APPLICATION NUMBER:  US/08/466,852
;     FILING DATE:
;     CLASSIFICATION:  424
;  ATTORNEY/AGENT INFORMATION:
;     NAME:  Panzer, Curtis C.
;     REGISTRATION NUMBER:  33,752
;     REFERENCE/DOCKET NUMBER:  19151IA
;  TELECOMMUNICATION INFORMATION:
;     TELEPHONE:  (908) 594-3199
;     TELEFAX:  (908) 594-4720
;  INFORMATION FOR SEQ ID NO:  2:
;     SEQUENCE CHARACTERISTICS:
;        LENGTH:  47 bases
;        TYPE:  nucleic acid
;        STRANDEDNESS:  single
;        TOPOLOGY:  linear
;        MOLECULE TYPE:  DNA (genomic)
US-08-466-852-2

Qy          17 ATTTGAGTTTGCTAGCTCTTGG 38
               |||||||||||||||||||||||
Db          29 ATTTGAGTTTGCTAGCTCTTGG 8

Query Match             5.5%;  Score 22;  DB 1;  Length 47;
Best Local Similarity 100.0%;  Pred. No. 0.33;
Matches   22;  Conservative  0;  Mismatches   0;  Indels   0;  Gaps   0;
```

```
Search completed: August  8, 2005, 13:43:36
Job time : 82.8667 secs
```

OM nucleic - nucleic search, using sw model

Copyright (c) 1993 - 2005 Compugen Ltd.
GenCore version 5.1.6

Run on: August 8, 2005, 08:46:14 ; Search time 789.2 Seconds
                 (without alignments)
                 6459.370 Million cell updates/sec

Title: US-10-787-382-7
Perfect score: 402
Sequence: 1 atgagaatgcttctgaattt..........ccgagtggacaccggaaagt 402

Scoring table: Gapop 60.0 , Gapext 60.0
                 OLIGO_NUC

Searched: 21947045 seqs, 6340466511 residues
Word size :   0

Total number of hits satisfying chosen parameters: 43894090

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database :   Pending Patents NA New:*

```
 1: /cgn2_6/ptodata7i/pna/PCT_NEW_COMB.seq:*
 2: /cgn2_6/ptodata/1/pna/PCT_NEW_COMB.seq2:*
 3: /cgn2_6/ptodata/1/pna/US06_NEW_COMB.seq:*
 4: /cgn2_6/ptodata/1/pna/US07_NEW_COMB.seq:*
 5: /cgn2_6/ptodata/1/pna/US08_NEW_COMB.seq:*
 6: /cgn2_6/ptodata/1/pna/US08_NEW_COMB.seq8:*
 7: /cgn2_6/ptodata/1/pna/US09_NEW_COMB.seq:*
 8: /cgn2_6/ptodata/1/pna/US09_NEW_COMB.seq1:*
 9: /cgn2_6/ptodata/1/pna/US10_NEW_COMB.seq1:*
10: /cgn2_6/ptodata/1/pna/US10_NEW_COMB.seq10:*
11: /cgn2_6/ptodata/1/pna/US10_NEW_COMB.seq2:*
12: /cgn2_6/ptodata/1/pna/US10_NEW_COMB.seq3:*
13: /cgn2_6/ptodata/1/pna/US10_NEW_COMB.seq4:*
14: /cgn2_6/ptodata/1/pna/US10_NEW_COMB.seq5:*
15: /cgn2_6/ptodata/1/pna/US10_NEW_COMB.seq6:*
16: /cgn2_6/ptodata/1/pna/US10_NEW_COMB.seq7:*
17: /cgn2_6/ptodata/1/pna/US10_NEW_COMB.seq8:*
18: /cgn2_6/ptodata/1/pna/US10_NEW_COMB.seq9:*
19: /cgn2_6/ptodata/1/pna/US11_NEW_COMB.seq:*
20: /cgn2_6/ptodata/1/pna/US11_NEW_COMB.seq1:*
21: /cgn2_6/ptodata/1/pna/US11_NEW_COMB.seq2:*
22: /cgn2_6/ptodata/1/pna/US11_NEW_COMB.seq5:*
23: /cgn2_6/ptodata/1/pna/US60_NEW_COMB.seq:*
```

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	402	100.0	402	11	US-10-916-286A-83	Sequence 83, Appl
2	402	100.0	402	11	US-10-916-286A-84	Sequence 84, Appl
3	402	100.0	610	11	PCT-US05-00517-3424	Sequence 3424, Ap
4	402	100.0	610	11	US-10-916-286A-80	Sequence 80, Appl
5	402	100.0	610	11	US-10-916-286A-82	Sequence 82, Appl
6	345	85.8	345	11	US-10-916-286A-85	Sequence 85, Appl
7	345	85.8	345	11	US-10-916-286A-87	Sequence 87, Appl
8	40	10.0	405	11	PCT-US05-00517-150	Sequence 150, App
9	22	5.5	405	23	US-60-680-544-25813	Sequence 25813, A
10	22	5.5	405	23	US-60-680-473-25813	Sequence 25813, A
11	22	5.5	459	11	US-10-880-101A-85	Sequence 85, Appl
12	22	5.5	816	11	US-10-880-101A-87	Sequence 87, Appl
13	22	5.5	816	23	US-60-659-397-502	Sequence 502, App
14	22	5.5	816	23	US-60-675-841-243	Sequence 243, App
15	22	5.0	994	9	US-10-301-480C-971893	Sequence 971893,
16	22	5.5	994	15	US-10-301-480A-971893	Sequence 971893,
17	22	5.5	994	16	US-10-301-480-595824	Sequence 595824,
18	22	5.5	994	17	US-10-301-480-1209233	Sequence 1209233,
19	22	5.5	3230	16	US-10-301-480B-971893	Sequence 971893,
20	22	5.5	3241	17	US-10-880-101A-91	Sequence 91, Appl
21	22	5.5	3241	11	US-10-916-286A-137	Sequence 137, Ap
22	22	5.5	14079	11	US-10-916-286A-89	Sequence 89, Appl
23	22	5.5	14079	23	US-10-301-480-12092	Sequence 12092, A
24	21	5.2	36	11	US-10-939-107-8	Sequence 8, Appl
25	21	5.2	201	23	US-60-659-397-7131	Sequence 7131, Ap
26	21	5.2	858	12	US-10-939-107-10	Sequence 10, Appl
27	21	5.2	858	12	US-10-939-107-12	Sequence 12, Appl
28	21	5.2	864	12	US-10-939-107-14	Sequence 14, Appl
29	20	5.0	864	9	US-10-301-480C-578937	Sequence 578937,
30	20	5.0	569	12	US-10-301-480C-578938	Sequence 578938,
31	20	5.0	569	15	US-10-301-480A-578937	Sequence 578937,
32	20	5.0	569	15	US-10-301-480A-578938	Sequence 578938,
33	20	5.0	569	16	US-10-301-480-202868	Sequence 202868,
34	20	5.0	569	16	US-10-301-480-202869	Sequence 202869,
35	20	5.0	569	16	US-10-301-480-816277	Sequence 816277,
36	20	5.0	569	16	US-10-301-480-816278	Sequence 816278,
37	20	5.0	569	16	US-10-301-480B-578937	Sequence 578937,
38	20	5.0	569	17	US-10-301-480B-578938	Sequence 578938,
39	20	5.0	582	7	US-09-925-065A-102503	Sequence 102503,
40	20	5.0	582	7	US-09-925-065A-102502	Sequence 102502,
41	20	5.0	586	9	US-10-301-480C-434229	Sequence 434229,
42	20	5.0	586	15	US-10-301-480A-434229	Sequence 434229,
43	20	5.0	586	16	US-10-301-480-58160	Sequence 58160, A
44	20	5.0	586	16	US-10-301-480-671569	Sequence 671569,
45	20	5.0	586	17	US-10-301-480B-434229	Sequence 434229,

ALIGNMENTS

RESULT 1
US-10-916-286A-83

; Sequence 83, Application US/10916286A
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Dreitz, Matthew J.
; TITLE OF INVENTION: CANINE IL-4 IMMUNOREGULATORY PROTEINS AND USES THEREOF
; FILE REFERENCE: IM-2-C1-R
; CURRENT APPLICATION NUMBER: US/10/916,286A
; CURRENT FILING DATE: 2004-08-11
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 83
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-916-286A-83

Query Match 100.0%; Score 402; DB 11; Length 402;
Best Local Similarity 100.0%;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy  1 ATGAGAATGCTTCTGAATTTGGTTTGCTTAGCTCTTGGGGCTCCTAGTTTCTGCCTTT 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  1 ATGAGAATGCTTCTGAATTTGGTTTGCTTAGCTCTTGGGGCTCCTAGTTTCTGCCTTT 60

Qy 61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
```

RESULT 2
US-10-916-286A-84/c
; Sequence 84, Application US/10916286A
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Dreitz, Matthew J.
; TITLE OF INVENTION: CANINE IL-4 IMMUNOREGULATORY PROTEINS AND USES THEREOF
; FILE REFERENCE: IM-2-C1-R
; CURRENT APPLICATION NUMBER: US/10/916,286A
; CURRENT FILING DATE: 2004-08-11
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 84
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-916-286A-84

Query Match   100.0%;   Score 402;   DB 11;   Length 402;
Best Local Similarity   100.0%;   Pred. No. 1.1e-194;
Matches 402;   Conservative 0;   Mismatches 0;   Indels 0;   Gaps 0;

```
Qy    1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTTATGTTTCTGCCTTT  60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  402 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTTATGTTTCTGCCTTT 343

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGTGCGCAGAGACCCTTGACACTGCTCTCCACTCAT 120
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  342 GCTGTAGAAAATCCCATGAATAGACTGGTGGTGCGCAGAGACCCTTGACACTGCTCTCCACTCAT 283

Qy  121 CGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  282 CGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 223

Qy  181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGAGACACAATGAAGAACCAAACTGCCCAC 240
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  222 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGAGACACAATGAAGAACCAAACTGCCCAC 163

Qy  241 GGGGAGGCTGTGGATAAAACTATTCCAAAAACTGTCTTTAATAAAAGAACACATAGAGCGC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  162 GGGGAGGCTGTGGATAAAACTATTCCAAAAACTGTCTTTAATAAAAGAACACATAGAGCGC 103

Qy  301 CAAAAAAAAAGGTGTCCAGGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  102 CAAAAAAAAAGGTGTCCAGGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA  43

Qy  361 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGAAAGT 402
          |||||||||||||||||||||||||||||||||||||||||||
Db   42 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGAAAGT   1
```

RESULT 3
PCT-US05-00517-3424
; Sequence 3424, Application PC/TUS050517
; GENERAL INFORMATION:
; APPLICANT: THE OHIO STATE UNIVERSITY
; TITLE OF INVENTION: METHODS OF USING DATABASES TO CREATE GENE-EXPRESSION MICROARRAYS, MICROARRAYS CREATED THEREBY, AND USES OF THE MICROARRAYS
; FILE REFERENCE: 18525-04130
; CURRENT APPLICATION NUMBER: PCT/US05/00517
; CURRENT FILING DATE: 2005-01-07
; PRIOR APPLICATION NUMBER: 60/535,111
; PRIOR FILING DATE: 2004-01-08
; NUMBER OF SEQ ID NOS: 3859
; SOFTWARE: Patentin version 3.3
; SEQ ID NO 3424
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
PCT-US05-00517-3424

Query Match   100.0%;   Score 402;   DB 1;   Length 610;
Best Local Similarity   100.0%;   Pred. No. 1.1e-194;
Matches 402;   Conservative 0;   Mismatches 0;   Indels 0;   Gaps 0;

```
Qy    1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTTATGTTTCTGCCTTT  60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   29 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTTATGTTTCTGCCTTT  88

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGTGCGCAGAGACCCTTGACACTGCTCTCCACTCAT 120
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   89 GCTGTAGAAAATCCCATGAATAGACTGGTGGTGCGCAGAGACCCTTGACACTGCTCTCCACTCAT 148

Qy  121 CGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  149 CGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 208

Qy  181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGAGACACAATGAAGAACCAAACTGCCCAC 240
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  209 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGAGACACAATGAAGAACCAAACTGCCCAC 268

Qy  241 GGGGAGGCTGTGGATAAAACTATTCCAAAAACTGTCTTTAATAAAAGAACACATAGAGCGC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  269 GGGGAGGCTGTGGATAAAACTATTCCAAAAACTGTCTTTAATAAAAGAACACATAGAGCGC 328

Qy  301 CAAAAAAAAAGGTGTCCAGGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  329 CAAAAAAAAAGGTGTCCAGGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388

Qy  361 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGAAAGT 402
          |||||||||||||||||||||||||||||||||||||||||||
Db  389 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGAAAGT 430
```

RESULT 4
US-10-916-286A-80
; Sequence 80, Application US/10916286A
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Dreitz, Matthew J.
; TITLE OF INVENTION: CANINE IL-4 IMMUNOREGULATORY PROTEINS AND USES THEREOF
; FILE REFERENCE: IM-2-C1-R
; CURRENT APPLICATION NUMBER: US/10/916,286A
; CURRENT FILING DATE: 2004-08-11
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0

```
; SEQ ID NO 80
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (29)..(430)
US-10-916-286A-80

Query Match             100.0%;  Score 402;  DB 11;  Length 610;
Best Local Similarity   100.0%;  Pred. No. 1.1e-194;
Matches   402;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy    1 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTGCTTTATGTTTCTGCCTTT 60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   29 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTGCTTTATGTTTCTGCCTTT 88

Qy   61 GCTGTGAGAAAATCCCATGAATAGACTGGTGGCAGAGAACCTGACACTGCTCTCCACTCAT 120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   89 GCTGTGAGAAAATCCCATGAATAGACTGGTGGCAGAGAACCTGACACTGCTCTCCACTCAT 148

Qy  121 CGAACTTGGCTGTGATAGGCGGATGGGAACCTGATGAGAATGCTCTGAAAATAAAATCAC 180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  149 CGAACTTGGCTGTGATAGGCGGATGGGAACCTGATGAGAATGCTCTGAAAATAAAATCAC 208

Qy  181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATGAAGAACACATAGAGCGC 240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  209 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATGAAGAACACATAGAGCGC 268

Qy  241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTAATAAAAGAACACATAGAGCGC 300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  269 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTAATAAAAGAACACATAGAGCGC 328

Qy  301 CAAAAAAAAGGTGTGCAGGAGAAAGATGGGAGAGTTCCTAGACTACCTGCAA 360
         ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  329 CAAAAAAAAGGTGTGCAGGAGAAAGATGGGAGAGTTCCTAGACTACCTGCAA 388

Qy  361 GTATTTCTTGGTGTGTAATAAAACACCGAGTGGGACACCCGAAAGT 402
         ||||||||||||||||||||||||||||||||||||||||||
Db  389 GTATTTCTTGGTGTGTAATAAAACACCGAGTGGGACACCCGAAAGT 430
```

```
RESULT 5
US-10-916-286A-82/c
Sequence 82, Application US/1091628GA
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Dreitz, Matthew J.
; TITLE OF INVENTION: CANINE IL-4 IMMUNOREGULATORY PROTEINS AND USES THEREOF
; FILE REFERENCE: IM-2-C1-R
; CURRENT APPLICATION NUMBER: US/10/916,286A
; CURRENT FILING DATE: 2004-08-11
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 82
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-916-286A-82

Query Match             100.0%;  Score 402;  DB 11;  Length 610;
Best Local Similarity   100.0%;  Pred. No. 1.1e-194;
Matches   402;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy    1 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTGCTTTATGTTTCTGCCTTT 60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  582 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTGCTTTATGTTTCTGCCTTT 523

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAACCTGACACTGCTCTCCACTCAT 120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  522 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAACCTGACACTGCTCTCCACTCAT 463
```

```
RESULT 6
US-10-916-286A-85
Sequence 85, Application US/1091628GA
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Dreitz, Matthew J.
; TITLE OF INVENTION: CANINE IL-4 IMMUNOREGULATORY PROTEINS AND USES THEREOF
; FILE REFERENCE: IM-2-C1-R
; CURRENT APPLICATION NUMBER: US/10/916,286A
; CURRENT FILING DATE: 2004-08-11
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 85
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(345)
US-10-916-286A-85

Query Match             85.8%;  Score 345;  DB 11;  Length 345;
Best Local Similarity   100.0%;  Pred. No. 1.6e-165;
Matches   345;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy   58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAACCTGACACTGCTCTCCACT 117
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAACCTGACACTGCTCTCCACT 60

Qy  118 CATCGAACTTGGCTGTGATAGGCGGATGGGAACCTGATGAGAATGCTCTGAAAATAAAAT 177
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CATCGAACTTGGCTGTGATAGGCGGATGGGAACCTGATGAGAATGCTCTGAAAATAAAAT 120

Qy  178 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATGAAGAACACATAGAGCC 237
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATGAAGAACACATAGAGCC 180

Qy  238 CACGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 297
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 CACGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240

Qy  298 CCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGGAGAGTTCCTAGACTACCTG 357
         |||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGGAGAGTTCCTAGACTACCTG 300
```

Qy   358 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 402
                |||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345

RESULT 7
US-10-916-286A-87/c
; Sequence 87, Application US/10916286A
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Dreitz, Matthew J.
; TITLE OF INVENTION: CANINE IL-4 IMMUNOREGULATORY PROTEINS AND USES THEREOF
; FILE REFERENCE: IM-2-C1-R
; CURRENT APPLICATION NUMBER: US/10/916,286A
; CURRENT FILING DATE: 2004-08-11
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 87
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-916-286A-87

Query Match   85.8%; Score 345; DB 11; Length 345;
Best Local Similarity   100.0%; Pred. No. 1.6e-165;
Matches   345; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   58 TTTGCTGTAGAAAATCCCATCAAATAGACTGGTCGTGGCAGAGAGACCTTGACACTGCTCTCCACT 117
                |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   345 TTTGCTGTAGAAAATCCCATCAAATAGACTGGTCGTGGCAGAGAGACCTTGACACTGCTCTCCACT 286

Qy   118 CATCGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTCCGAAAATAAAAAAT 177
                |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   285 CATCGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTCCGAAAATAAAAAAT 226

Qy   178 CACCAAACTGTGCATTAAAGAAAGTTTTTCAGGGTATAGACACATTGAAGAAACCAAACTGCC 237
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   225 CACCAAACTGTGCATTAAAGAAAGTTTTTCAGGGTATAGACACATTGAAGAAACCAAACTGCC 166

Qy   238 CACGGGGGAGGCGTGTGGAATAAACTATTCCAAAAACTGTCTCTTTAATAAAAGAACACATAGAG 297
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   165 CACGGGGGAGGCGTGTGGAATAAACTATTCCAAAAACTGTCTCTTTAATAAAAGAACACATAGAG 106

Qy   298 CGCCAAAAAAAAGGTGTGCAGGAGAGAGATGGGAGAGTGACAAAAGTTTCCTAGACTACCTG 357
                |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   105 CGCCAAAAAAAAGGTGTGCAGGAGAGAGATGGGAGAGTGACAAAAGTTTCCTAGACTACCTG 46

Qy   358 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 402
                |||||||||||||||||||||||||||||||||||||||||||||
Db   45 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 1

RESULT 8
PCT-US05-00517-150
; Sequence 150, Application PCT/TUS0500517
; GENERAL INFORMATION:
; APPLICANT: THE OHIO STATE UNIVERSITY
; TITLE OF INVENTION: METHODS OF USING DATABASES TO CREATE GENE-EXPRESSION MICROARRAYS,
; TITLE OF INVENTION: MICROARRAYS CREATED THEREBY, AND USES OF THE MICROARRAYS
; FILE REFERENCE: 18525-04130
; CURRENT APPLICATION NUMBER: PCT/US05/00517
; CURRENT FILING DATE: 2005-01-07
; PRIOR APPLICATION NUMBER: 60/535,111
; PRIOR FILING DATE: 2004-01-08
; NUMBER OF SEQ ID NOS: 3859
; SOFTWARE: PatentIn version 3.3
; SEQ ID NO 150
; LENGTH: 405
; TYPE: DNA

ORGANISM: Equus caballus
PCT-US05-00517-150

Query Match   10.0%; Score 40; DB 1; Length 405;
Best Local Similarity   100.0%; Pred. No. 1.5e-09;
Matches   40; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   129 GCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAA 168
                ||||||||||||||||||||||||||||||||||||||||
Db   129 GCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAA 168

RESULT 9
US-60-680-544-25813
; Sequence 25813, Application US/60680544
; GENERAL INFORMATION:
; APPLICANT: Cooper, Matthew
; APPLICANT: Kinch, Deborah
; APPLICANT: Rosenberg, Michael
; APPLICANT: Subramaniam, S. Sai
; APPLICANT: Szak, Suzanne
; APPLICANT: Li, Huo
; APPLICANT: Bandaru, Raj
; APPLICANT: Derbel, Maher
; TITLE OF INVENTION: Nucleotide Array Containing Polynucleotide Probes Complementary to
; TITLE OF INVENTION: Fragments of, Cynomolgus Monkey Genes and the Use Thereof
; FILE REFERENCE: 215902990000
; CURRENT APPLICATION NUMBER: US/60/680,544
; CURRENT FILING DATE: 2005-05-13
; NUMBER OF SEQ ID NOS: 48714
; SOFTWARE: Patent Sequence Analysis Tool Version 1.0
; SEQ ID NO 25813
; LENGTH: 405
; TYPE: DNA
; ORGANISM: Macaca Mulatta
US-60-680-544-25813

Query Match   5.5%; Score 22; DB 23; Length 405;
Best Local Similarity   100.0%; Pred. No. 2.4;
Matches   22; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   17 ATTTGAGTTTGCTAGCTCTTGG 38
                ||||||||||||||||||||||
Db   17 ATTTGAGTTTGCTAGCTCTTGG 38

RESULT 10
US-60-680-473-25813
; Sequence 25813, Application US/60680473
; GENERAL INFORMATION:
; APPLICANT: Cooper, Matthew
; APPLICANT: Kinch, Deborah
; APPLICANT: Rosenberg, Michael
; APPLICANT: Subramaniam, S. Sai
; APPLICANT: Szak, Suzanne
; APPLICANT: Li, Huo
; APPLICANT: Bandaru, Raj
; APPLICANT: Derbel, Maher
; TITLE OF INVENTION: Nucleotide Array Containing Polynucleotide Probes Complementary to
; TITLE OF INVENTION: Fragments of, Cynomolgus Monkey Genes and the Use Thereof
; FILE REFERENCE: 215902900000
; CURRENT APPLICATION NUMBER: US/60/680,473
; CURRENT FILING DATE: 2005-05-13
; NUMBER OF SEQ ID NOS: 48714
; SOFTWARE: Patent Sequence Analysis Tool Version 1.0
; SEQ ID NO 25813
; LENGTH: 405
; TYPE: DNA
; ORGANISM: Macaca Mulatta
US-60-680-473-25813

Query Match   5.5%; Score 22; DB 23; Length 405;
Best Local Similarity   100.0%; Pred. No. 2.4;

```
Matches      22; Conservative     0; Mismatches     0; Indels     0; Gaps     0;

Qy     17 ATTTGAGTTTGCTAGCTCTTGG 38
          |||||||||||||||||||||||
Db     17 ATTTGAGTTTGCTAGCTCTTGG 38
```

RESULT 11
US-10-880-101A-85
; Sequence 85, Application US/10880101A
; GENERAL INFORMATION:
; APPLICANT: SCHAEBITZ, WOLF-RUEDIGER
; APPLICANT: SCHNEIDER, ARMIN
; APPLICANT: KRUEGER, CAROLA
; APPLICANT: SOMMER, CLEMENS
; APPLICANT: SCHWAB, STEFAN
; APPLICANT: KOLLMAR, RAINER
; APPLICANT: MAURER, MARTIN
; APPLICANT: WEBER, DANIELA
; APPLICANT: GASSLER, NIKOLAUS
; TITLE OF INVENTION: METHODS OF TREATING NEUROLOGICAL CONDITIONS WITH HEMATOPOEITIC
; TITLE OF INVENTION: GROWTH FACTORS
; FILE REFERENCE: 25462US
; CURRENT APPLICATION NUMBER: US/10/880,101A
; CURRENT FILING DATE: 2004-06-30
; PRIOR APPLICATION NUMBER: PCT/IB03/006446
; PRIOR FILING DATE: 2003-12-31
; PRIOR APPLICATION NUMBER: US 10/659,295
; PRIOR FILING DATE: 2003-09-11
; PRIOR APPLICATION NUMBER: US 10/331,755
; PRIOR FILING DATE: 2002-12-31
; NUMBER OF SEQ ID NOS: 94
; SOFTWARE: PatentIn version 3.3
;
; SEQ ID NO 85
; LENGTH: 459
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-880-101A-85

```
Query Match             5.5%;  Score 22;  DB 11;  Length 459;
Best Local Similarity 100.0%;  Pred. No. 2.4;
Matches     22; Conservative    0; Mismatches     0; Indels     0; Gaps     0;

Qy     17 ATTTGAGTTTGCTAGCTCTTGG 38
          |||||||||||||||||||||||
Db     40 ATTTGAGTTTGCTAGCTCTTGG 61
```

RESULT 12
US-10-880-101A-87
; Sequence 87, Application US/10880101A
; GENERAL INFORMATION:
; APPLICANT: SCHAEBITZ, WOLF-RUEDIGER
; APPLICANT: SCHNEIDER, ARMIN
; APPLICANT: KRUEGER, CAROLA
; APPLICANT: SOMMER, CLEMENS
; APPLICANT: SCHWAB, STEFAN
; APPLICANT: KOLLMAR, RAINER
; APPLICANT: MAURER, MARTIN
; APPLICANT: WEBER, DANIELA
; APPLICANT: GASSLER, NIKOLAUS
; TITLE OF INVENTION: METHODS OF TREATING NEUROLOGICAL CONDITIONS WITH HEMATOPOEITIC
; TITLE OF INVENTION: GROWTH FACTORS
; FILE REFERENCE: 25462US
; CURRENT APPLICATION NUMBER: US/10/880,101A
; CURRENT FILING DATE: 2004-06-30
; PRIOR APPLICATION NUMBER: PCT/IB03/006446
; PRIOR FILING DATE: 2003-12-31
; PRIOR APPLICATION NUMBER: US 10/659,295
; PRIOR FILING DATE: 2003-09-11
; PRIOR APPLICATION NUMBER: US 10/331,755
; PRIOR FILING DATE: 2002-12-31
; NUMBER OF SEQ ID NOS: 94
; SOFTWARE: PatentIn version 3.3
;
; SEQ ID NO 87
; LENGTH: 816
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-880-101A-87

```
Query Match             5.5%;  Score 22;  DB 11;  Length 816;
Best Local Similarity 100.0%;  Pred. No. 2.5;
Matches     22; Conservative    0; Mismatches     0; Indels     0; Gaps     0;

Qy     17 ATTTGAGTTTGCTAGCTCTTGG 38
          |||||||||||||||||||||||
Db     61 ATTTGAGTTTGCTAGCTCTTGG 82
```

RESULT 13
US-60-659-397-502
; Sequence 502, Application US/60659397
; GENERAL INFORMATION:
; APPLICANT: CARGILL, Michele
; APPLICANT: CHANG, Sheng-Yung
; TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH
; TITLE OF INVENTION: RESPONSE TO INTERFERON TREATMENT IN HEPATITIS C
; TITLE OF INVENTION: VIRUS-INFECTED SUBJECTS, METHODS OF DETECTION AND USES
; TITLE OF INVENTION: THEREOF
; FILE REFERENCE: CL001470
; CURRENT APPLICATION NUMBER: US/60/659,397
; CURRENT FILING DATE: 2005-03-09
; NUMBER OF SEQ ID NOS: 47859
; SOFTWARE: FastSEQ for Windows Version 4.0
;
; SEQ ID NO 502
; LENGTH: 816
; TYPE: DNA
; ORGANISM: Homo sapiens
US-60-659-397-502

```
Query Match             5.5%;  Score 22;  DB 23;  Length 816;
Best Local Similarity 100.0%;  Pred. No. 2.5;
Matches     22; Conservative    0; Mismatches     0; Indels     0; Gaps     0;

Qy     17 ATTTGAGTTTGCTAGCTCTTGG 38
          |||||||||||||||||||||||
Db     61 ATTTGAGTTTGCTAGCTCTTGG 82
```

RESULT 14
US-60-675-841-243
; Sequence 243, Application US/60675841
; GENERAL INFORMATION:
; APPLICANT: Belouchi, Abdelmajid
; APPLICANT: Raelson, John Verner
; APPLICANT: Bradley, Walter Edward
; APPLICANT: Paquin, Bruno
; APPLICANT: Fournier, Helene
; APPLICANT: Nguyen-Huu, Quynh
; APPLICANT: Croteau, Pascal
; TITLE OF INVENTION: GeneMap of the Human Genes Associated with Crohn's Disease
; FILE REFERENCE: 59908-5002-PR
; CURRENT APPLICATION NUMBER: US/60/675,841
; CURRENT FILING DATE: 2005-04-29
; NUMBER OF SEQ ID NOS: 10858
; SOFTWARE: PatentIn version 3.3
;
; SEQ ID NO 243
; LENGTH: 816
; TYPE: DNA
; ORGANISM: Homo sapiens
US-60-675-841-243

```
Qy       17 ATTTGAGTTTGCTAGCTCTTGG 38
            ||||||||||||||||||||||
Db       61 ATTTGAGTTTGCTAGCTCTTGG 82
```

RESULT 15
US-10-301-480C-971893
; Sequence 971893, Application US/10301480C
; GENERAL INFORMATION:
;   APPLICANT: Wang, David G.
;   TITLE OF INVENTION: Identification and Mapping of Single
;   TITLE OF INVENTION: Nucleotide Polymorphisms in the Human Genome
;   FILE REFERENCE: 108827-137
;   CURRENT APPLICATION NUMBER: US/10/301,480C
;   CURRENT FILING DATE: 2002-11-21
;   PRIOR APPLICATION NUMBER: US 10/215,598
;   PRIOR FILING DATE: 2002-08-09
;   PRIOR APPLICATION NUMBER: US 60/311,695
;   PRIOR FILING DATE: 2001-08-10
;   NUMBER OF SEQ ID NOS: 989478
;   SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 971893
;   LENGTH: 994
;   TYPE: DNA
;   ORGANISM: Homo sapien
US-10-301-480C-971893

  Query Match   5.5%; Score 22; DB 9; Length 994;
  Best Local Similarity   100.0%; Pred. No. 2.5;
  Matches   22; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

```
Qy       17 ATTTGAGTTTGCTAGCTCTTGG 38
            ||||||||||||||||||||||
Db      940 ATTTGAGTTTGCTAGCTCTTGG 961
```

Search completed: August 8, 2005, 16:03:50
Job time : 789.2 secs

OM nucleic - nucleic search, using sw model

GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

Run on: August 8, 2005, 13:43:44 ; Search time 1706.67 Seconds
(without alignments)
8965.920 Million cell updates/sec

Title: US-10-787-382-7
Perfect score: 402
Sequence: 1 atggagaatgcttctgaattt..........ccgagtcggaccaccggaaagt 402
Scoring table: OLIGO_NUC
Gapop 60.0 , Gapext 60.0
Searched: 34239544 seqs, 19032134700 residues
Word size : 0

Total number of hits satisfying chosen parameters: 68479088

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries
Database :
EST:*
1: gb_est1:*
2: gb_est2:*
3: gb_htc:*
4: gb_est3:*
5: gb_est4:*
6: gb_est5:*
7: gb_est6:*
8: gb_gss1:*
9: gb_gss2:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	129	32.1	622	9	CE331159	CE331159 tigr-gss-
2	22	5.5	405	9	AY412020	AY412020 Homo sapi
3	22	5.5	405	9	AY412021	AY412021 Pan trogl
4	22	5.5	456	3	BC066281	BC066281 Homo sapi
5	22	5.5	456	3	BC066281	BC066281 Homo sapi
6	22	5.5	456	3	CD559532	CD559532 AGENCOURT
c 7	22	5.5	456	6	CD559686	CD559686 AGENCOURT
8	22	5.5	458	3	BC066279	BC066279 Homo sapi
9	22	5.5	463	6	BC066280	BC066280 Homo sapi
c 10	22	5.5	467	6	CD559535	CD559535 AGENCOURT
c 11	22	5.5	467	6	CD559688	CD559688 AGENCOURT
c 12	22	5.5	467	6	CD559690	CD559690 AGENCOURT
13	22	5.5	470	6	CD559687	CD559687 AGENCOURT
14	22	5.5	473	6	CD559689	CD559689 AGENCOURT
c 15	22	5.5	477	6	CD559608	CD559608 AGENCOURT
c 16	22	5.5	478	6	CD559534	CD559534 AGENCOURT
17	22	5.5	489	6	CD559536	CD559536 AGENCOURT
c 18	22	5.5	492	6	CD559533	CD559533 AGENCOURT
c 19	22	5.5	495	7	CR554944	CR554944 DKFZp469N
c 20	21	5.2	817	3	BC069137	BC069137 Homo sapi
c 21	20	5.0	428	9	CE301804	CE301804 tigr-gss-
c 22	20	5.0	153	9	CE713006	CE713006 tigr-gss-
c 23	20	5.0	174	9	CE387560	CE387560 tigr-gss-
c 24	20	5.0	305	1	AI666365	AI666365 mu12c07.x
c 25	20	5.0	340	1	AI666525	AI666525 mu22f12.x
c 26	20	5.0	378	8	AQ134641	AQ134641 HS_3055_B
c 27	20	5.0	393	8	BH056804	BH056804 RPCI-24-3
c 28	20	5.0	417	5	BQ456087	BQ456087 ke26c12.y
c 29	20	5.0	431	7	AA200961	AA200961 mu12c07.r
c 30	20	5.0	490	7	CN448219	CN448219 GUO_cDNA-
c 31	20	5.0	503	9	CE629992	CE629992 tigr-gss-
c 32	20	5.0	514	9	CE553498	CE553498 tigr-gss-
c 33	20	5.0	522	5	CE669822	CE669822 tigr-gss-
34	20	5.0	528	1	BX514766	BX514766 tigr-gss-
c 35	20	5.0	538	1	AQ677395	AQ677395 HS_5526_A
c 36	20	5.0	551	9	AA980077	AA980077 ua28c09.r
c 37	20	5.0	557	2	CE255920	CE255920 tigr-gss-
c 38	20	5.0	576	1	A2266075	A2266075 RPCI-23-1
39	20	5.0	587	9	AI645939	AI645939 mu12c07.y
c 40	20	5.0	591	9	CE144318	CE144318 tigr-gss-
c 41	20	5.0	591	9	CE101024	CE101024 tigr-gss-
c 42	20	5.0	595	9	CE566794	CE566794 tigr-gss-
c 43	20	5.0	605	9	CE384620	CE384620 tigr-gss-
c 44	20	5.0	608	9	CE687596	CE687596 tigr-gss-
c 45	20	5.0	615	9	CE027208	CE027208 tigr-gss-
				9	CE240114	CE240114 tigr-gss-

ALIGNMENTS

RESULT 1
CE331159
LOCUS   CE331159   622 bp   DNA   linear   GSS 26-SEP-2003
DEFINITION tigr-gss-dog-1700033986568 Dog Library Canis familiaris genomic,
genomic survey sequence.
ACCESSION CE331159
VERSION   CE331159.1 GI:36147469
KEYWORDS GSS.
SOURCE   Canis familiaris (dog)
ORGANISM Canis familiaris
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE 1 (bases 1 to 622)
AUTHORS Kirkness,E.F., Bafna,V., Halpern,A.L., Levy,S., Remington,K.,
Rusch,D.B., Delcher,A.L., Pop,M., Wang,W., Fraser,C.M. and
Venter,J.C.
TITLE The dog genome: survey sequencing and comparative analysis
JOURNAL Science 301 (5641), 1898-1903 (2003)
MEDLINE 22875432
PUBMED 14512627
COMMENT Contact: Kirkness EF
The Institute for Genomic Research
Department of Eukaryotic Genomics, TIGR, 9712 Medical Center Drive,
Rockville, MD 20850, USA
Tel: 301-838-0200
Fax: 301-838-0208
Email: ekirknes@tigr.org
Class: shotgun.
FEATURES Location/Qualifiers
source 1..622
/organism="Canis familiaris"
/mol_type="genomic DNA"
/strain="standard Poodle"
/db_xref="taxon:9615"
/clone_lib="Dog Library"
/note="Site 1: BstXI; Libraries were prepared from
peripheral blood"
ORIGIN

Query Match 32.1%; Score 129; DB 9; Length 622;
Best Local Similarity 100.0%; Pred. No. 4e-57;
Matches 129; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 178 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACACATTGAAGAACCAAAACTGCC 237
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 42 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACACATTGAAGAACCAAAACTGCC 101

```
Qy    238 CACGGGGAGGCGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 297
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    102 CACGGGGAGGCGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 161

Qy    298 CGCCAAAAA 306
          |||||||||
Db    162 CGCCAAAAA 170
```

RESULT 2
```
LOCUS       AY412020                 405 bp    DNA     linear   GSS 16-DEC-2003
DEFINITION  Homo sapiens IL5 gene, VIRTUAL TRANSCRIPT, partial sequence,
            genomic survey sequence.
ACCESSION   AY412020
VERSION     AY412020.1  GI:3767985
KEYWORDS    GSS.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 405)
  AUTHORS   Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
            Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
            Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
            Adams,M.D. and Cargill,M.
  TITLE     Inferring nonneutral evolution from human-chimp-mouse orthologous
            gene trios
  JOURNAL   Science 302 (5652), 1960-1963 (2003)
   PUBMED   14671302
REFERENCE   2  (bases 1 to 405)
  AUTHORS   Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
            Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
            Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
            Adams,M.D. and Cargill,M.
  TITLE     Direct Submission
  JOURNAL   Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive,
            Rockville, MD 20850, USA
COMMENT     This sequence was made by sequencing genomic exons and ordering
            them based on alignment.
FEATURES             Location/Qualifiers
     source          1..405
                     /organism="Homo sapiens"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9606"
     gene            <1..>405
                     /gene="IL5"
                     /locus_tag="HCM4418"
ORIGIN

Query Match      5.5%;   Score 22;  DB 9;  Length 405;
Best Local Similarity  100.0%;  Pred. No. 3.9;
Matches 22;  Conservative 0;  Mismatches 0;  Indels 0;  Gaps 0;

Qy     17 ATTTGAGTTTGCTAGCTCTTGG 38
          ||||||||||||||||||||||
Db     17 ATTTGAGTTTGCTAGCTCTTGG 38
```

RESULT 3
```
LOCUS       AY412021                 405 bp    DNA     linear   GSS 16-DEC-2003
DEFINITION  Pan troglodytes IL5 gene, VIRTUAL TRANSCRIPT, partial sequence,
            genomic survey sequence.
ACCESSION   AY412021
VERSION     AY412021.1  GI:3767986
KEYWORDS    GSS.
SOURCE      Pan troglodytes (chimpanzee)
  ORGANISM  Pan troglodytes
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.
REFERENCE   1  (bases 1 to 405)
  AUTHORS   Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
            Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
            Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
            Adams,M.D. and Cargill,M.
  TITLE     Inferring nonneutral evolution from human-chimp-mouse orthologous
            gene trios
  JOURNAL   Science 302 (5652), 1960-1963 (2003)
   PUBMED   14671302
REFERENCE   2  (bases 1 to 405)
  AUTHORS   Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
            Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
            Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
            Adams,M.D. and Cargill,M.
  TITLE     Direct Submission
  JOURNAL   Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive,
            Rockville, MD 20850, USA
COMMENT     This sequence was made by sequencing genomic exons and ordering
            them based on alignment.
FEATURES             Location/Qualifiers
     source          1..405
                     /organism="Pan troglodytes"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9598"
     gene            <1..>405
                     /gene="IL5"
                     /locus_tag="HCM4418"
ORIGIN

Query Match      5.5%;   Score 22;  DB 9;  Length 405;
Best Local Similarity  100.0%;  Pred. No. 3.9;
Matches 22;  Conservative 0;  Mismatches 0;  Indels 0;  Gaps 0;

Qy     17 ATTTGAGTTTGCTAGCTCTTGG 38
          ||||||||||||||||||||||
Db     17 ATTTGAGTTTGCTAGCTCTTGG 38
```

RESULT 4
```
LOCUS       BC066281                 456 bp    mRNA    linear   HTC 12-FEB-2004
DEFINITION  Homo sapiens cDNA clone IMAGE:6971770, containing frame-shift
            errors.
ACCESSION   BC066281
VERSION     BC066281.1  GI:42490969
KEYWORDS    HTC.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 456)
  AUTHORS   Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
            Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
            Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
            Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
            Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
            Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
            Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
            Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
            Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
            McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
            Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
            Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
            Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodrigues,S.,
            Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
            Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
            Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
            Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
            Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
  TITLE     Generation and initial analysis of more than 15,000 full-length
            human and mouse cDNA sequences
  JOURNAL   Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
   PUBMED   12477932
REFERENCE   2  (bases 1 to 456)
  AUTHORS   Strausberg,R.
```

TITLE   Direct Submission
JOURNAL   Submitted (03-FEB-2004) National Institutes of Health, Mammalian
          Gene Collection (MGC), Cancer Genomics Office, National Cancer
          Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
          USA
REMARK   NIH-MGC Project URL: http://mgc.nci.nih.gov
COMMENT   Contact: MGC help desk
          Email: cgapbs-r@mail.nih.gov
          Tissue Procurement: Narayan Bhat
          cDNA Library Preparation: Bhat Laboratory
          cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
          DNA Sequencing by: Sequencing Group at the Stanford Human Genome
          Center, Stanford University School of Medicine, Stanford, CA 94305
          Web site: http://www-shgc.stanford.edu
          Contact: (Dickson, Mark) mcd@paxil.stanford.edu
          Dickson, M., Schmutz, J., Grimwood, J., Rodriguez, A., and Myers,
          R. M.
FEATURES
source
          Clone distribution: MGC clone distribution information can be found
          through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
          Series: IRAK Plate: 172 Row: a Column: 17
          This clone was selected for full length sequencing because it
          passed the following selection criteria: matched mRNA gi: 28559032
          This clone has the following problem: frame shifted.
          Location/Qualifiers
          1..456
          /organism="Homo sapiens"
          /mol_type="mRNA"
          /db_xref="taxon:9606"
          /clone="IMAGE:6971770"
          /tissue_type="PCR rescued clones"
          /clone_lib="NIH_MGC_195"
          /lab_host="DH10B"
          /note="Vector: pDNR-Dual"

ORIGIN
Qy   17 ATTTGAGTTTGCTAGCTCTTGG 38
         ||||||||||||||||||||||
Db   40 ATTTGAGTTTGCTAGCTCTTGG 61

Best Local Similarity   100.0%;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Query Match   5.5%;   Score 22;   Pred. No. 3.9;   DB 3;   Length 456;

RESULT 5
LOCUS   CD559532   456 bp   mRNA   linear   EST 11-JUN-2003
DEFINITION   AGENCOURT 14497057 NIH_MGC_195 Homo sapiens cDNA clone
             IMAGE:6971772 5', mRNA sequence.
ACCESSION   CD559532
VERSION   CD559532.1 GI:31585600
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 456)
AUTHORS   National Institutes of Health, Mammalian Gene Collection (MGC)
TITLE   Unpublished (1999)
JOURNAL
COMMENT   Contact: Daniela S. Gerhard, Ph.D.
             Office of Cancer Genomics
             National Cancer Institute / NIH
             Bldg. 31 Rm10A07 Bethesda, MD 20892
             Email: cgapbs-r@mail.nih.gov
             Tissue Procurement: Narayan Bhat
             cDNA Library Preparation: Bhat Laboratory
             cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
             DNA Sequencing by: Agencourt Bioscience Corporation
             Clone distribution: MGC clone distribution information can be
             found through the I.M.A.G.E. Consortium/LLNL at:
             http://image.llnl.gov

FEATURES
source   Plate: IRBK1 row: g column: 11
           High quality sequence stop: 456.
           Location/Qualifiers
           1..456
           /organism="Homo sapiens"
           /mol_type="mRNA"
           /db_xref="taxon:9606"
           /clone="IMAGE:6971772"
           /tissue_type="mixed"
           /clone_lib="NIH_MGC_195"
           /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
           loxP-HindIII; Clones from this library have been
           PCR-amplified using gene-specific primers to contain the
           complete open reading frame (based on known gene sequences
           available from NCBI's RefSeq). Template for PCR is cDNA
           derived from either pooled cytoplasmic polyA RNA from 30
           cells lines or pooled total RNA from 10 different tissues
           (from BD Biosciences/Clontech and Washington University).
           PCR products are directionally cloned into the loxP sites
           of the pDNR-Dual vector. Library constructed by Dr.
           Narayan Bhat, Earl Bere III and Hongling Liao (Gene
           Expression Laboratory, Research Technology Program, SAIC
           Frederick, NCI-Frederick, Frederick, MD 21702). For
           information on which gene each clone represents, please
           visit our anonymous ftp site at
           ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSV.dat
           a Note: this is a NIH_MGC Library."

ORIGIN
Qy   17 ATTTGAGTTTGCTAGCTCTTGG 38
         ||||||||||||||||||||||
Db   38 ATTTGAGTTTGCTAGCTCTTGG 59

Best Local Similarity   100.0%;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Query Match   5.5%;   Score 22;   Pred. No. 3.9;   DB 6;   Length 456;

RESULT 6
LOCUS   CD559686/c   456 bp   mRNA   linear   EST 11-JUN-2003
DEFINITION   AGENCOURT 14497093 NIH_MGC_195 Homo sapiens cDNA clone
             IMAGE:6971772 3', mRNA sequence.
ACCESSION   CD559686
VERSION   CD559686.1 GI:31585754
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 456)
AUTHORS   National Institutes of Health, Mammalian Gene Collection (MGC)
TITLE   Unpublished (1999)
JOURNAL
COMMENT   Contact: Daniela S. Gerhard, Ph.D.
             Office of Cancer Genomics
             National Cancer Institute / NIH
             Bldg. 31 Rm10A07 Bethesda, MD 20892
             Email: cgapbs-r@mail.nih.gov
             Tissue Procurement: Narayan Bhat
             cDNA Library Preparation: Bhat Laboratory
             cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
             DNA Sequencing by: Agencourt Bioscience Corporation
             Clone distribution: MGC clone distribution information can be
             found through the I.M.A.G.E. Consortium/LLNL at:
             http://image.llnl.gov
FEATURES
source   1..456
             /organism="Homo sapiens"
             /mol_type="mRNA"
             High quality sequence stop: 456.
             Plate: IRBK1 row: g column: 11
             Location/Qualifiers

RESULT 7

```
Query Match             5.5%;  Score 22;  DB 6;  Length 456;
Best Local Similarity   100.0%;  Pred. No. 3.9;
Matches   22;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy    17 ATTTGAGTTTGCTAGCTCTTGG 38
         ||||||||||||||||||||||
Db   417 ATTTGAGTTTGCTAGCTCTTGG 396
```

```
LOCUS       BC066279                 458 bp    mRNA    linear    HTC 12-FEB-2004
DEFINITION  Homo sapiens cDNA clone IMAGE:6971768, containing frame-shift
            errors.
ACCESSION   BC066279
VERSION     BC066279.1  GI:44290901
KEYWORDS    HTC.
SOURCE      Homo sapiens (human)
ORGANISM    Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 458)
AUTHORS     Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
            Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
            Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
            Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
            Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
            Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
            Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
            Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
            Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
            McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
            Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
            Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
            Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodrigues,S.,
            Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
            Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
            Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
            Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
            Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
TITLE       Generation and initial analysis of more than 15,000 full-length
            human and mouse cDNA sequences
JOURNAL     Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
PUBMED      12477932
REFERENCE   2  (bases 1 to 458)
AUTHORS     Strausberg,R.
TITLE       Direct Submission
JOURNAL     Submitted (03-FEB-2004) National Institutes of Health, Mammalian
            Gene Collection (MGC), Cancer Genomics Office, National Cancer
            Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
            USA
REMARK      NIH-MGC Project URL: http://mgc.nci.nih.gov
COMMENT     Contact: MGC help desk
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Sequencing Group at the Stanford Human Genome
            Center, Stanford University School of Medicine, Stanford, CA 94305
            Web site:      http://www-shgc.stanford.edu
            Contact:  (Dickson, Mark) mcd@paxil.stanford.edu
            Dickson, M., Schmutz, J., Grimwood, J., Rodriguez, A., and Myers,
            R. M.
            Clone distribution: MGC clone distribution information can be found
            through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
            Series: IRAK Plate: 172 Row: a Column: 15
            This clone was selected for full length sequencing because it
            passed the following selection criteria: matched mRNA gi: 28559032
            This clone has the following problem: frame shifted.
FEATURES             Location/Qualifiers
     source          1..458
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971768"
                     /tissue_type="PCR rescued clones"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH10B"
                     /note="Vector: pDNR-Dual"
ORIGIN
```

RESULT 8

```
Query Match             5.5%;  Score 22;  DB 3;  Length 458;
Best Local Similarity   100.0%;  Pred. No. 3.9;
Matches   22;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy    17 ATTTGAGTTTGCTAGCTCTTGG 38
         ||||||||||||||||||||||
Db    40 ATTTGAGTTTGCTAGCTCTTGG 61
```

```
LOCUS       BC066280                 458 bp    mRNA    linear    HTC 12-FEB-2004
DEFINITION  Homo sapiens cDNA clone IMAGE:6971769, containing frame-shift
            errors.
ACCESSION   BC066280
VERSION     BC066280.1  GI:44290838
KEYWORDS    HTC.
SOURCE      Homo sapiens (human)
ORGANISM    Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 458)
AUTHORS     Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
            Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
            Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
            Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
            Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
            Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
            Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
            Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
            Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
            McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
            Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
            Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
            Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodrigues,S.,
            Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
            Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
            Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
            Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
            Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
```

(continued on next page, left column segment)

```
ORIGIN
            Note: this is a NIH_MGC Library."
            ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSV.dat
            visit our anonymous ftp site at:
            information on which gene each clone represents, please
            Frederick, NCI-Frederick, Frederick, MD 21702). For
            Expression Laboratory, Research Technology Program, SAIC
            Narayan Bhat, Earl Bere III and Hongling Liao (Gene
            of the pDNR-Dual vector. Library constructed by Dr.
            PCR products are directionally cloned into the loxP sites
            (from BD Biosciences/Clontech and Washington University).
            cells lines or pooled total RNA from 10 different tissues
            derived from either pooled cytoplasmic polyA RNA from 30
            available from NCI's RefSeq). Template for PCR is cDNA
            complete open reading frame (based on known gene sequences
            PCR-amplified using gene-specific primers to contain the
            loxP-HindIII; Clones from this library have been
            /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
            /lab_host="DH5A (T1 phage-resistant)"
            /clone_lib="NIH_MGC_195"
            /tissue_type="mixed"
            /clone="IMAGE:6971772"
            /db_xref="taxon:9606"
```

Qy   17 ATTTGAGTTTGCTAGCTCTTGG 38
Db   417 ATTTGAGTTTGCTAGCTCTTGG 396

```
TITLE       Generation and initial analysis of more than 15,000 full-length
            human and mouse cDNA sequences
JOURNAL     Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
PUBMED      12477932
REFERENCE   2 (bases 1 to 458)
AUTHORS     Strausberg,R.
TITLE       Direct Submission
JOURNAL     Submitted (03-FEB-2004) National Institutes of Health, Mammalian
            Gene Collection (MGC), Cancer Genomics Office, National Cancer
            Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
            USA
REMARK      NIH-MGC Project URL: http://mgc.nci.nih.gov
COMMENT     Contact: MGC help desk
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            DNA Sequencing by: Sequencing Group at the Stanford Human Genome
            Center, Stanford University School of Medicine, Stanford, CA 94305
            Web site: http://www-shgc.stanford.edu
            Contact: (Dickson, Mark) mcd@paxil.stanford.edu
            Dickson, M., Schmutz, J., Grimwood, J., Rodriquez, A., and Myers,
            R. M.
            This clone has the following problem: frame shifted.
FEATURES             Location/Qualifiers
     source          1..458
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971769"
                     /tissue_type="PCR rescued clones"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH10B"
                     /note="Vector: pDNR-Dual"
ORIGIN

Qy         17 ATTTGAGTTTGCTAGCTCTTGG 38
              ||||||||||||||||||||||
Db         40 ATTTGAGTTTGCTAGCTCTTGG 61

RESULT 9
LOCUS       CD559535                 463 bp    mRNA    linear   EST 26-NOV-2003
DEFINITION  AGENCOURT_14496865 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971769 5', mRNA sequence.
ACCESSION   CD559535
VERSION     CD559535.2  GI:38558950
KEYWORDS    EST.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 463)
AUTHORS     NIH-MGC http://mgc.nci.nih.gov/.
TITLE       National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL     Unpublished (1999)
COMMENT     On Jun 10, 2003 this sequence version replaced gi:31585603.
            Contact: Daniela S. Gerhard, Ph.D.
            National Cancer Institute / NIH
            Office of Cancer Genomics
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov

Query Match            5.5%;  Score 22;  DB 3;  Length 458;
Best Local Similarity  100.0%;
Matches   22;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;
```

```
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBKl  row: g  column: 08
FEATURES             Location/Qualifiers
     source          1..463
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971769"
                     /tissue_type="mixed"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /note="Vector: pDNR-Dual; Site 1: loxP-SalI; Site 2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presv.dat
                     a Note: this is a NIH_MGC Library."
                     High quality sequence stop: 463.
ORIGIN

Qy         17 ATTTGAGTTTGCTAGCTCTTGG 38
              ||||||||||||||||||||||
Db         44 ATTTGAGTTTGCTAGCTCTTGG 65

RESULT 10
CD559688/c
LOCUS       CD559688                 467 bp    mRNA    linear   EST 19-NOV-2003
DEFINITION  AGENCOURT_14496964 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971770 5', mRNA sequence.
ACCESSION   CD559688
VERSION     CD559688.2  GI:38453486
KEYWORDS    EST.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 467)
AUTHORS     NIH-MGC http://mgc.nci.nih.gov/.
TITLE       National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL     Unpublished (1999)
COMMENT     On Jun 10, 2003 this sequence version replaced gi:31585756.
            Contact: Daniela S. Gerhard, Ph.D.
            National Cancer Institute / NIH
            Office of Cancer Genomics
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be

Query Match            5.5%;  Score 22;  DB 6;  Length 463;
Best Local Similarity  100.0%;
Matches   22;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;
```

FEATURES
    source   Location/Qualifiers
                      1..467
                      /organism="Homo sapiens"
                      /mol_type="mRNA"
                      /db_xref="taxon:9606"
                      /clone="IMAGE:6971768"
                      /tissue_type="mixed"
                      /clone_lib="NIH_MGC_195"
                      /lab_host="DH5A (T1 phage-resistant)"
                      /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                      loxP-HindIII; Clones from this library have been
                      PCR-amplified using gene-specific primers to contain the
                      complete open reading frame (based on known gene sequences
                      available from NCBI's RefSeq). Template for PCR is cDNA
                      derived from either pooled total RNA from 10 different tissues
                      cells lines or pooled cytoplasmic polyA RNA from 30
                      (from BD Biosciences/Clontech and Washington University).
                      PCR products are directionally cloned into the loxP sites
                      of the pDNR-Dual vector. Library constructed by Dr.
                      Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                      Expression Laboratory, Research Technology Program, SAIC
                      Frederick, NCI-Frederick, Frederick, MD 21702). For
                      information on which gene each clone represents, please
                      visit our anonymous ftp site at
                      ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSv.dat
                      a Note: this is a NIH_MGC Library."

ORIGIN

Qy   17 ATTTGAGTTTGCTAGCTCTTGG 38
         |||||||||||||||||||||||
Db   427 ATTTGAGTTTGCTAGCTCTTGG 406

Query Match   5.5%; Score 22; DB 6; Length 467;
Best Local Similarity 100.0%; Pred. No. 3.9;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

RESULT 11
CD559690/c
LOCUS   CD559690   467 bp   mRNA   linear   EST 19-NOV-2003
DEFINITION AGENCOURT 14496838 NIH_MGC_195 Homo sapiens cDNA clone
           IMAGE:6971768 5', mRNA sequence.
ACCESSION   CD559690
VERSION   CD559690.2 GI:38453490
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
  ORGANISM Homo sapiens
           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
           Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 467)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585758.
           Contact: Daniela S. Gerhard, Ph.D.
           Office of Cancer Genomics
           National Cancer Institute / NIH
           Bldg. 31 Rm10A07 Bethesda, MD 20892
           Email: cgapbs-r@mail.nih.gov
           Tissue Procurement: Narayan Bhat
           cDNA Library Preparation: Bhat Laboratory
           cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
           DNA Sequencing by: Agencourt Bioscience Corporation
           Clone distribution: MGC clone distribution information can be
           found through the I.M.A.G.E. Consortium/LLNL at:
           http://image.llnl.gov
           Plate: IRBK1 row: g column: 09
           High quality sequence start: 11
           High quality sequence stop: 467.
           found through the I.M.A.G.E. Consortium/LLNL at:
           http://image.llnl.gov

FEATURES
    source   Location/Qualifiers
                      1..467
                      /organism="Homo sapiens"
                      /mol_type="mRNA"
                      /db_xref="taxon:9606"
                      /clone="IMAGE:6971768"
                      /tissue_type="mixed"
                      /clone_lib="NIH_MGC_195"
                      /lab_host="DH5A (T1 phage-resistant)"
                      /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                      loxP-HindIII; Clones from this library have been
                      PCR-amplified using gene-specific primers to contain the
                      complete open reading frame (based on known gene sequences
                      available from NCBI's RefSeq). Template for PCR is cDNA
                      derived from either pooled total RNA from 10 different tissues
                      cells lines or pooled cytoplasmic polyA RNA from 30
                      (from BD Biosciences/Clontech and Washington University).
                      PCR products are directionally cloned into the loxP sites
                      of the pDNR-Dual vector. Library constructed by Dr.
                      Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                      Expression Laboratory, Research Technology Program, SAIC
                      Frederick, NCI-Frederick, Frederick, MD 21702). For
                      information on which gene each clone represents, please
                      visit our anonymous ftp site at
                      ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSv.dat
                      a Note: this is a NIH_MGC Library."

ORIGIN

Qy   17 ATTTGAGTTTGCTAGCTCTTGG 38
         |||||||||||||||||||||||
Db   427 ATTTGAGTTTGCTAGCTCTTGG 406

Query Match   5.5%; Score 22; DB 6; Length 467;
Best Local Similarity 100.0%; Pred. No. 3.9;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

RESULT 12
CD559687/c
LOCUS   CD559687   470 bp   mRNA   linear   EST 19-NOV-2003
DEFINITION AGENCOURT 14497029 NIH_MGC_195 Homo sapiens cDNA clone
           IMAGE:6971771 5', mRNA sequence.
ACCESSION   CD559687
VERSION   CD559687.2 GI:38453484
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
  ORGANISM Homo sapiens
           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
           Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 470)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585755.
           Contact: Daniela S. Gerhard, Ph.D.
           Office of Cancer Genomics
           National Cancer Institute / NIH
           Bldg. 31 Rm10A07 Bethesda, MD 20892
           Email: cgapbs-r@mail.nih.gov
           Tissue Procurement: Narayan Bhat
           cDNA Library Preparation: Bhat Laboratory
           cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
           DNA Sequencing by: Agencourt Bioscience Corporation
           Clone distribution: MGC clone distribution information can be
           found through the I.M.A.G.E. Consortium/LLNL at:
           http://image.llnl.gov
           Plate: IRBK1 row: g column: 10
           High quality sequence start: 14
           High quality sequence stop: 470.

FEATURES
    source   Location/Qualifiers
                      1..470
                      /organism="Homo sapiens"
                      /mol_type="mRNA"

RESULT 13

LOCUS   CD559689/c   473 bp   mRNA   linear   EST 19-NOV-2003
DEFINITION IMAGE:6971769 5', mRNA sequence.
ACCESSION   CD559689
VERSION   CD559689.2 GI:38453487
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
  ORGANISM Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 473)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585757.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBK1 row: g column: 08
            High quality sequence start: 16
            High quality sequence stop: 473.
FEATURES   Location/Qualifiers
     source   1..473
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971769"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSv.dat
                     a Note: this is a NIH_MGC Library."

ORIGIN

Qy   17 ATTTGAGTTTGCTAGCTCTTGG 38
               ||||||||||||||||||||||
Db   430 ATTTGAGTTTGCTAGCTCTTGG 409

Query Match   5.5%; Score 22; DB 6; Length 470;
Best Local Similarity   100.0%; Pred. No. 3.9;
Matches   22; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

RESULT 14

LOCUS   CD559608   477 bp   mRNA   linear   EST 26-NOV-2003
DEFINITION IMAGE:6971867 5', mRNA sequence.
ACCESSION   CD559608
VERSION   CD559608.2 GI:38558942
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
  ORGANISM Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 477)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585676.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBK2 row: g column: 10
            High quality sequence start: 107
            High quality sequence stop: 353.
FEATURES   Location/Qualifiers
     source   1..477
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971867"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSv.dat
                     a Note: this is a NIH_MGC Library."

ORIGIN

Qy   17 ATTTGAGTTTGCTAGCTCTTGG 38
               ||||||||||||||||||||||
Db   433 ATTTGAGTTTGCTAGCTCTTGG 412

Query Match   5.5%; Score 22; DB 6; Length 473;
Best Local Similarity   100.0%; Pred. No. 3.9;
Matches   22; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

RESULT 15
CD559534
CD559534

```
LOCUS       CD559534              478 bp    mRNA    linear   EST 26-NOV-2003
DEFINITION  AGENCOURT_14496928 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971770 5', mRNA sequence.
ACCESSION   CD559534
VERSION     CD559534.2  GI:38558949
KEYWORDS    EST.
SOURCE      Homo sapiens (human)
ORGANISM    Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 478)
AUTHORS     NIH-MGC http://mgc.nci.nih.gov/.
TITLE       National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL     Unpublished (1999)
COMMENT     On Jun 10, 2003 this sequence version replaced gi:31585602.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBKi  row:g  column: 09
            High quality sequence start: 3
            High quality sequence stop: 478.
FEATURES             Location/Qualifiers
     source          1..478
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971770"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual.; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
```

complete open reading frame (based on known gene sequences
available from NCBI's RefSeq). Template for PCR is cDNA
derived from either pooled cytoplasmic polyA RNA from 30
cells lines or pooled total RNA from 10 different tissues
(from BD Biosciences/Clontech and Washington University).
PCR products are directionally cloned into the loxP sites
of the pDNR-Dual vector. Library constructed by Dr.
Narayan Bhat, Earl Bere III and Hongling Liao (Gene
Expression Laboratory, Research Technology Program, SAIC
Frederick, NCI-Frederick, Frederick, MD 21702). For
information on which gene each clone represents, please
visit our anonymous ftp site at
ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presv.dat
a Note: this is a NIH_MGC Library."

ORIGIN

```
Query Match     5.5%;  Score 22;  DB 6;  Length 477;
Best Local Similarity  100.0%;  Pred. No. 3.9;
Matches 22;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy   17 ATTTGAGTTTGCTAGCTCTTGG 38
         ||||||||||||||||||||||
Db   57 ATTTGAGTTTGCTAGCTCTTGG 78
```

(from BD Biosciences/Clontech and Washington University).
PCR products are directionally cloned into the loxP sites
of the pDNR-Dual vector. Library constructed by Dr.
Narayan Bhat, Earl Bere III and Hongling Liao (Gene
Expression Laboratory, Research Technology Program, SAIC
Frederick, NCI-Frederick, Frederick, MD 21702). For
information on which gene each clone represents, please
visit our anonymous ftp site at
ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presv.dat
a Note: this is a NIH_MGC Library."

ORIGIN

```
Query Match     5.5%;  Score 22;  Pred.No. 3.9;  DB 6;  Length 478;
Best Local Similarity  100.0%;  Mismatches  0;  Indels  0;  Gaps  0;
Matches 22;  Conservative  0;

Qy   17 ATTTGAGTTTGCTAGCTCTTGG 38
         ||||||||||||||||||||||
Db   61 ATTTGAGTTTGCTAGCTCTTGG 82
```

Search completed: August 9, 2005, 00:13:19
Job time : 1707.67 secs

```
OM nucleic - nucleic search, using sw model

                                          GenCore version 5.1.6
                                          Copyright (c) 1993 - 2005 Compugen Ltd.

Run on:            August  7, 2005, 08:50:30 ; Search time 81.8667 Seconds
                                              (without alignments)
                                              8034.812 Million cell updates/sec

Title:             US-10-787-382-7
Perfect score:     402
Sequence:          1 atgagaatgcttctgaattc..................ccgagtggacaccggaaagt 402

Scoring table:     IDENTITY NUC
                   Gapop 10.0 , Gapext 1.0

Searched:          1202784 seqs, 818138359 residues

Total number of hits satisfying chosen parameters:         2405568

Maximum DB seq length: 2000000000
Minimum DB seq length: 0

Post-processing: Minimum Match 0%
                 Maximum Match 100%
                 Listing first 45 summaries

Database :         Issued Patents NA:*
                   1: /cgn2_6/ptodata/1/ina/5A_COMB.seq:*
                   2: /cgn2_6/ptodata/1/ina/5B_COMB.seq:*
                   3: /cgn2_6/ptodata/1/ina/6A_COMB.seq:*
                   4: /cgn2_6/ptodata/1/ina/6B_COMB.seq:*
                   5: /cgn2_6/ptodata/1/ina/PCTUS_COMB.seq:*
                   6: /cgn2_6/ptodata/1/ina/backfiles1.seq:*

                   Pred. No. is the number of results predicted by chance to have a
                   score greater than or equal to the score of the result being printed,
                   and is derived by analysis of the total score distribution.

                                              SUMMARIES
                                                                   %
Result                   Query
 No.     Score   Match  Length  DB   ID                                Description
------   -----   -----  ------  --   -------------------    ----------------------
c   1    402     100.0    402    4   US-09-322-409-83       Sequence 83, Appl
    2    402     100.0    402    4   US-09-322-409-84       Sequence 84, Appl
c   3    402     100.0    402    4   US-09-451-527-83       Sequence 83, Appl
c   4    402     100.0    402    4   US-09-322-409-80       Sequence 80, Appl
c   5    402     100.0    610    4   US-09-322-409-82       Sequence 82, Appl
c   6    402     100.0    610    4   US-09-322-409-82       Sequence 82, Appl
c   7    402     100.0    610    4   US-09-451-527-80       Sequence 80, Appl
c   8    402     100.0    610    4   US-09-451-527-82       Sequence 82, Appl
c   9    398.8    99.2    405    4   US-09-371-615A-1       Sequence 1, Appli
   10    345      85.8    345    4   US-09-322-409-85       Sequence 85, Appl
c  11    345      85.8    345    4   US-09-322-409-87       Sequence 87, Appl
c  12    345      85.8    345    4   US-09-451-527-85       Sequence 85, Appl
   13    345      85.8    345    4   US-09-451-527-87       Sequence 87, Appl
c  14    277.2    69.0    816    4   US-09-079-839-2        Sequence 2, Appli
   15    275.6    68.6    816    4   US-09-023-655-1236     Sequence 1236, Ap
   16    206.4    51.3   1534    3   US-08-629-643A-4       Sequence 4, Appli
   17    206.4    51.3   1534    3   US-09-155-884-4        Sequence 4, Appli
   18    206.2    51.3    377    3   US-09-180-864-1        Sequence 1, Appli
   19    178.4    44.4    375    4   US-09-556-818-33       Sequence 33, Appl
   20    175.6    43.7    357    4   US-09-556-818-35       Sequence 35, Appl
   21    169.2    42.1    381    4   US-09-556-818-27       Sequence 27, Appl
   22    166.4    41.4    399    4   US-09-556-818-39       Sequence 39, Appl
   23    166      41.3    444    4   US-09-556-818-43       Sequence 43, Appl
   24    165.6    41.2    375    4   US-09-556-818-37       Sequence 37, Appl
   25    161.6    40.2    393    4   US-09-556-818-41       Sequence 41, Appl
   26    160.4    39.9    393    4   US-09-556-818-31       Sequence 31, Appl
   27    159.2    39.6    375    4   US-09-556-818-29       Sequence 29, Appl
c  28    148.4    36.9    351    4   US-09-556-818-51       Sequence 51, Appl
   29    145      36.1    393    4   US-09-556-818-55       Sequence 55, Appl
   30    144.8    36.0    375    4   US-09-556-818-45       Sequence 45, Appl
   31    144.8    36.0    438    4   US-09-556-818-59       Sequence 59, Appl
   32    141.8    35.3    387    4   US-09-556-818-57       Sequence 57, Appl
   33    140.8    35.0    369    4   US-09-556-818-53       Sequence 53, Appl
   34    125.6    31.2    369    4   US-09-556-818-47       Sequence 47, Appl
   35    123.6    30.7    387    4   US-09-556-818-49       Sequence 49, Appl
   36    99.4     24.7   3230    3   US-09-280-799-78       Sequence 78, Appl
   37    99.4     24.7   3230    6   Patent No. 5324640
c  38    99.4     24.7   3230    6   US-09-280-799-1        Patent No. 5324640
   39    90.6     22.5   6727    3   US-08-629-643A-5       Sequence 5, Appli
   40    90.6     22.5   6727    3   US-09-280-799-1        Sequence 1, Appli
   41    90.6     22.5   6727    3   US-09-155-884-5        Sequence 5, Appli
   42    45.8     11.4     57    4   US-09-556-818-61       Sequence 61, Appl
c  43    40.2     10.0     47    1   US-08-466-852-2        Sequence 2, Appl
c  44    38        9.5   7218    1   US-08-232-463-14       Sequence 14, Appl
   45    35.4      8.8  87352    4   US-09-949-016-12053    Sequence 12053, A
```

                                              ALIGNMENTS

```
RESULT 1
US-09-322-409-83
; Sequence 83, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
;  APPLICANT: Sim, Gek-Kee
;  APPLICANT: Yang, Shumin
;  APPLICANT: Dreitz, Matthew J.
;  APPLICANT: Wonderling, Ramani S.
;  TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;  TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;  FILE REFERENCE: IM-2-C1
;  CURRENT APPLICATION NUMBER: US/09/322,409
;  CURRENT FILING DATE: 1999-05-28
;  EARLIER APPLICATION NUMBER: 60/087,306
;  EARLIER FILING DATE: 1998-05-29
;  NUMBER OF SEQ ID NOS: 154
;  SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 83
;  LENGTH: 402
;  TYPE: DNA
;  ORGANISM: Canis familiaris
US-09-322-409-83

Query Match             100.0%;  Score 402;  DB 4;  Length 402;
Best Local Similarity   100.0%;  Pred. No. 7.5e-123;
Matches  402;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 ATGAGAATGCTTCTGAATTCTGAATTTGAGTTTTGCTAGCTTCTTGGGGCTTCGCCTTATGTTTTCTGCCTTT 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 ATGAGAATGCTTCTGAATTCTGAATTTGAGTTTTGCTAGCTTCTTGGGGCTTCGCCTTATGTTTTCTGCCTTT 60

Qy         61 GCTGTAGAAAATCCCATGAATAGAGACTGGTGGGCAGAGAGACCTTGACACTGCTTCTCCACTCAT 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 GCTGTAGAAAATCCCATGAATAGAGACTGGTGGGCAGAGAGACCTTGACACTGCTTCTCCACTCAT 120

Qy        121 CGAACTTCGGCTCGATAGGCGGATGGGGAACCTGATCGATTCCTACTCCTGAAAATAAAAATCAC 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 CGAACTTCGGCTCGATAGGCGGATGGGGAACCTGATCGATTCCTACTCCTGAAAATAAAAATCAC 180

Qy        181 CAACTGTGCATTAAAGAAAGTTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCCCAC 240
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 CAACTGTGCATTAAAGAAAGTTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCCCAC 240

Qy        241 GGGGAGGAGGCTGTGGGATAAAACTATTCCAAAACTGTTCTTTAATAAAAAGGAACACATAGAGCGC 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 GGGGAGGAGGCTGTGGGATAAAACTATTCCAAAACTGTTCTTTAATAAAAAGGAACACATAGAGCGC 300

Qy        301 CAAAAAAAAAAAGGTGTGCAGGAGAAGATGGAGGAGTGACAAAGTTCCTAGACTTACCTGCAA 360
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 CAAAAAAAAAAAGGTGTGCAGGAGAAGATGGAGGAGTGACAAAGTTCCTAGACTTACCTGCAA 360
```

Db   301 CAAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Qy   361 GTATTTCTTGGTGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 402
Db   361 GTATTTCTTGGTGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 402

RESULT 2
US-09-322-409-84/c
Sequence 84, Application US/09322409
Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
;
SEQ ID NO 84
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-322-409-84

Query Match   100.0%;   Score 402;   DB 4;   Length 402;
Best Local Similarity   100.0%;   Pred. No. 7.5e-123;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTGCCTAGTTGTTTCTGCCTTT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTGCCTAGTTGTTTCTGCCTTT 60

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy   121 CGAACTTGGCTGATAGGCGATGGGGAACCTGAGATTCCTACTCCCTGAAAAATAAAAATCAC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CGAACTTGGCTGATAGGCGATGGGGAACCTGAGATTCCTACTCCCTGAAAAATAAAAATCAC 180

Qy   181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAACAAACTGCCCAC 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAACAAACTGCCCAC 240

Qy   241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300

Qy   301 CAAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Qy   361 GTATTTCTTGGTGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 402
          ||||||||||||||||||||||||||||||||||||||||||||||
Db   361 GTATTTCTTGGTGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 402

RESULT 3
US-09-451-527-83
Sequence 83, Application US/0945 1527
Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.

TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
;
SEQ ID NO 83
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-451-527-83

Query Match   100.0%;   Score 402;   DB 4;   Length 402;
Best Local Similarity   100.0%;   Pred. No. 7.5e-123;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTGCCTAGTTGTTTCTGCCTTT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTGCCTAGTTGTTTCTGCCTTT 60

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy   121 CGAACTTGGCTGATAGGCGATGGGGAACCTGAGATTCCTACTCCCTGAAAAATAAAAATCAC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CGAACTTGGCTGATAGGCGATGGGGAACCTGAGATTCCTACTCCCTGAAAAATAAAAATCAC 180

Qy   181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAACAAACTGCCCAC 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAACAAACTGCCCAC 240

Qy   241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300

Qy   301 CAAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Qy   361 GTATTTCTTGGTGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 402
          ||||||||||||||||||||||||||||||||||||||||||||||
Db   361 GTATTTCTTGGTGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 402

RESULT 4
US-09-451-527-84/c
Sequence 84, Application US/09451527
Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
;
SEQ ID NO 84
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-451-527-84

```
RESULT 5
US-09-322-409-80
; Sequence 80, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
;  APPLICANT: Sim, Gek-Kee
;  APPLICANT: Yang, Shumin
;  APPLICANT: Dreitz, Matthew J.
;  APPLICANT: Wonderling, Ramani S.
;  TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;  TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;  FILE REFERENCE: IM-2-C1
;  CURRENT APPLICATION NUMBER: US/09/322,409
;  CURRENT FILING DATE: 1999-05-28
;  EARLIER APPLICATION NUMBER: 60/087,306
;  EARLIER FILING DATE: 1998-05-29
;  NUMBER OF SEQ ID NOS: 154
;  SOFTWARE: PatentIn Ver. 2.0
;
;  SEQ ID NO 80
;  LENGTH: 610
;  TYPE: DNA
;  ORGANISM: Canis familiaris
US-09-322-409-80

  Query Match             100.0%;  Score 402;  DB 4;  Length 610;
  Best Local Similarity   100.0%;  Pred. No. 9.4e-123;
  Matches  402;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy          1 ATGAGAAATGCTTCTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTCTGCCTATTGTTTCTGCCTTT   60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         29 ATGAGAATGCTTCTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTCTGCCTATTGTTTCTGCCTTT   88

Qy          1 ATGAGAAATGCTTCTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTCTGCCTATGTTTCTGCCTTT   60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         29 ATGAGAATGCTTCTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTCTGCCTATGTTTCTGCCTCAT  120
```

```
Db    282 CAAAAAAAAAAGGTGTGCAGGAGAGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 223

Qy    361 GTATTTCTTGGTGTAATAAAACACCCGAGTGGACACCCGGAAAGT 402

Db    222 GTATTTCTTGGTGTAATAAAACACCCGAGTGGACACCCGGAAAGT 181
```

```
RESULT 7
US-09-451-527-80
Sequence 80, Application US/09451527
Patent No. 648240
GENERAL INFORMATION:
APPLICANT: Sim, Gek-Kee
APPLICANT: Yang, Shumin
APPLICANT: Dreitz, Matthew J.
APPLICANT: Wonderling, Ramani S.
TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
  ACID MOLECULES, AND USES THEREOF
TITLE OF INVENTION:
FILE REFERENCE: IM-2-C2
CURRENT APPLICATION NUMBER: US/09/451,527
CURRENT FILING DATE: 1999-12-01
EARLIER APPLICATION NUMBER: 09/322,409
EARLIER FILING DATE: 1999-05-28
EARLIER APPLICATION NUMBER: 60/087,306
EARLIER FILING DATE: 1998-05-29
NUMBER OF SEQ ID NOS: 174
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 80
LENGTH: 610
TYPE: DNA
ORGANISM: Canis familiaris
FEATURE:
NAME/KEY: CDS
LOCATION: (29)..(430)
US-09-451-527-80

Query Match          100.0%; Score 402; DB 4; Length 610;
Best Local Similarity  100.0%; Pred. No. 9.4e-123;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy    1   ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGCGTGCCTTATGTTTCTGCCTTT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    29  ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGCGTGCCTTATGTTTCTGCCTTT 88

Qy    61  GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    89  GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 148

Qy    121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAATCAC 180
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    149 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAATCAC 208

Qy    181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTTATAGACACAATTGAAGAACCAAAACTGCCCAC 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    209 CAACTGTGCATTAAAGAAGTTTTTCAGGGTTATAGACACAATTGAAGAACCAAAACTGCCCAC 268

Qy    241 GGGGAGGCCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACACATAGAGCGC 300
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    269 GGGGAGGCCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACACATAGAGCGC 328

Qy    301 CAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    329 CAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388

Qy    361 GTATTTCTTGGTGTAATAAAACACCCGAGTGGACACCCGGAAAGT 402
          |||||||||||||||||||||||||||||||||||||||||||||
Db    389 GTATTTCTTGGTGTAATAAAACACCCGAGTGGACACCCGGAAAGT 430
```

```
RESULT 8
US-09-451-527-82/c
Sequence 82, Application US/09451527
Patent No. 648240
```

```
GENERAL INFORMATION:
APPLICANT: Sim, Gek-Kee
APPLICANT: Yang, Shumin
APPLICANT: Dreitz, Matthew J.
APPLICANT: Wonderling, Ramani S.
TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
  ACID MOLECULES, AND USES THEREOF
TITLE OF INVENTION:
FILE REFERENCE: IM-2-C2
CURRENT APPLICATION NUMBER: US/09/451,527
CURRENT FILING DATE: 1999-12-01
EARLIER APPLICATION NUMBER: 09/322,409
EARLIER FILING DATE: 1999-05-28
EARLIER APPLICATION NUMBER: 60/087,306
EARLIER FILING DATE: 1998-05-29
NUMBER OF SEQ ID NOS: 174
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 82
LENGTH: 610
TYPE: DNA
ORGANISM: Canis familiaris
US-09-451-527-82

Query Match          100.0%; Score 402; DB 4; Length 610;
Best Local Similarity  100.0%; Pred. No. 9.4e-123;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy    1   ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGCGTGCCTTATGTTTCTGCCTTT 60
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    582 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGCGTGCCTTATGTTTCTGCCTTT 523

Qy    61  GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    522 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 463

Qy    121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAATCAC 180
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    462 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAATCAC 403

Qy    181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTTATAGACACAATTGAAGAACCAAAACTGCCCAC 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    402 CAACTGTGCATTAAAGAAGTTTTTCAGGGTTATAGACACAATTGAAGAACCAAAACTGCCCAC 343

Qy    241 GGGGAGGCCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACACATAGAGCGC 300
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    342 GGGGAGGCCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACACATAGAGCGC 283

Qy    301 CAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    282 CAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 223

Qy    361 GTATTTCTTGGTGTAATAAAACACCCGAGTGGACACCCGGAAAGT 402
          |||||||||||||||||||||||||||||||||||||||||||||
Db    222 GTATTTCTTGGTGTAATAAAACACCCGAGTGGACACCCGGAAAGT 181
```

```
RESULT 9
US-09-371-615A-1
Sequence 1, Application US/0937161 5A
Patent No. 6537781
GENERAL INFORMATION:
APPLICANT: IDEXX LABORATORIES
TITLE OF INVENTION: METHODS AND COMPOSITIONS CONCERNING
TITLE OF INVENTION: CANINE INTERLEUKIN 5
FILE REFERENCE: 0360400170OUS00
CURRENT APPLICATION NUMBER: US/09/371,615A
CURRENT FILING DATE: 1999-08-10
NUMBER OF SEQ ID NOS: 8
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 1
LENGTH: 405
TYPE: DNA
ORGANISM: Canis familiaris
US-09-371-615A-1
```

RESULT 10
US-09-322-409-85
; Sequence 85, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 85
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(345)
US-09-322-409-85

Query Match   99.2%; Score 398.8; DB 4; Length 405;
Best Local Similarity 99.5%; Pred. No. 8.6e-122;
Matches 400; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

Qy   1 ATGAGAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTAGTTCTTCTGCCTTT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 ATGAGAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTAGTTCTTCTGCCTTT 60

Qy   61 GCTGTGTAGAAAAATCCCATGAATAGACTGGTGGCCAGAGACCTTGACACTGCTCTCCACTCAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTGTAGAAAAATCCCATGAATAGACTGGTGGCCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy   121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTCTGAAAATAAAAATCAC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTCTGAAAATAAAAATCAC 180

Qy   181 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAGAACCAAAACTGCCCAC 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAGAACCAAAACTGCCCAC 240

Qy   241 GGGGAGGCCTGTGGATAAAACTATTCCAAAAACTATTCCAAAAACTTGTCTTTAATAAAAAGAACACATAGAGCGC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 GGGGAGGCCTGTGGATAAAACTATTCCAAAAACTATTCCAAAAACTTGTCTTTAATAAAAAGAACACATAGAGCGC 300

Qy   301 CAAAAAAAAAAGGTGTCCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAAAAAAAAAGGTGTCCAGGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Qy   361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
          ||||||||||||||||||||||||||||||||||||||||||
Db   361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402

RESULT 11
US-09-322-409-87/c
; Sequence 87, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 87
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-322-409-87

Query Match   85.8%; Score 345; DB 4; Length 345;
Best Local Similarity 100.0%; Pred. No. 5.1e-104;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   178 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAGAACCAAAACTGCC 237
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAGAACCAAAACTGCC 180

Qy   238 CACGGGGAGGCCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAAGAACACATAGAG 297
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CACGGGGAGGCCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAAGAACACATAGAG 240

Qy   298 CGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 357
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 CGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300

Qy   358 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
          |||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345

RESULT 12
US-09-451-527-85
; Sequence 85, Application US/09451527

Query Match   85.8%; Score 345; DB 4; Length 345;
Best Local Similarity 100.0%; Pred. No. 5.1e-104;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   58 TTTGCTGTAGAAAAATCCCATAATAGACTGTGTGGCGCAGAGACCTTGCACTGCTCTCCACT 117
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCCAGAGACCTTGACACTGCTCTCCACT 117

Qy   118 CATCGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTCTGAAAATAAAAAT 177
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CATCGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTCTGAAAATAAAAAT 120

Qy   178 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAGAACCAAAACTGCC 237
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAGAACCAAAACTGCC 180

Qy   238 CACGGGGAGGCCTGTGGATAAAACTATTCCAAAAACTATTCCAAAAACTTGTCTTTAATAAAAAGAACACATAGAG 297
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CACGGGGAGGCCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAAGAACACATAGAG 240

Qy   298 CGCCAAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 357
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 CGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 297

Qy   358 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
          ||||||||||||||||||||||||||||||||||||||||||| |
Db   45 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 1

RESULT 12
US-09-451-527-85
; Sequence 85, Application US/09451527

Query Match   85.8%; Score 345; DB 4; Length 345;
Best Local Similarity 100.0%; Pred. No. 5.1e-104;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   58 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCCAGAGACCTTGACACTGCTCTCCACT 117
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCCAGAGACCTTGACACTGCTCTCCACT 60

Qy   118 CATCGAACTTGGCTGATAGGGCATGGGGAACCTGATGATTCCTACTCCTCTGAAAATAAAAAT 177
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CATCGAACTTGGCTGATAGGGCATGGGGAACCTGATGATTCCTACTCCTCTGAAAATAAAAAT 120

; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shunin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 85
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(345)

US-09-451-527-85

Query Match   85.8%; Score 345; DB 4; Length 345;
Best Local Similarity   100.0%; Pred. No. 5.1e-104;
Matches 345; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACT 117
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACT 60

Qy   118 CATCCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATGAATTCCTACTCCTGAAAATAAAAAT 177
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CATCCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATGAATTCCTACTCCTGAAAATAAAAAT 120

Qy   178 CACCAAACTGTGTCATTAAAAGAAGTTTTTCAGGGTATAGACACATTGAAAGAACCAAAACTGCC 237
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CACCAAACTGTGTCATTAAAAGAAGTTTTTCAGGGTATAGACACATTGAAAGAACCAAAACTGCC 180

Qy   238 CACCGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACACATAGAG 297
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CACCGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACACATAGAG 240

Qy   298 CGCCAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAAGTTCCTAGACTACCTG 357
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 CGCCAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAAGTTCCTAGACTACCTG 300

Qy   358 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 402
           |||||||||||||||||||||||||||||||||||||||||
Db   301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345

RESULT 13
US-09-451-527-87/c
; Sequence 87, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shunin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29

; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 87
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris

US-09-451-527-87

Query Match   85.8%; Score 345; DB 4; Length 345;
Best Local Similarity   100.0%; Pred. No. 5.1e-104;
Matches 345; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACT 117
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   345 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACT 286

Qy   118 CATCCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATGAATTCCTACTCCTGAAAATAAAAAT 177
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   285 CATCCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATGAATTCCTACTCCTGAAAATAAAAAT 226

Qy   178 CACCAAACTGTGTCATTAAAAGAAGTTTTTCAGGGTATAGACACATTGAAAGAACCAAAACTGCC 237
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   225 CACCAAACTGTGTCATTAAAAGAAGTTTTTCAGGGTATAGACACATTGAAAGAACCAAAACTGCC 166

Qy   238 CACCGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACACATAGAG 297
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   165 CACCGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACACATAGAG 106

Qy   298 CGCCAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAAGTTCCTAGACTACCTG 357
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   105 CGCCAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAAGTTCCTAGACTACCTG 46

Qy   358 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 402
           |||||||||||||||||||||||||||||||||||||||||
Db   45 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 1

RESULT 14
US-09-079-839-2
; Sequence 2, Application US/09079839
; Patent No. 6048726
; GENERAL INFORMATION:
; APPLICANT: Weltman, Joel K.
; APPLICANT: Karim, Aftab S.
; TITLE OF INVENTION: INHIBITION OF EOSINOPHILIC INFLAMMATION
; FILE REFERENCE: 0998/002001
; CURRENT APPLICATION NUMBER: US/09/079,839
; CURRENT FILING DATE: 1998-05-15
; NUMBER OF SEQ ID NOS: 2
; SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 2
; LENGTH: 816
; TYPE: DNA
; ORGANISM: Homo sapiens

US-09-079-839-2

Query Match   69.0%; Score 277.2; DB 3; Length 816;
Best Local Similarity   80.6%; Pred. No. 2.2e-81;
Matches 324; Conservative   0; Mismatches 78; Indels   0; Gaps   0;

Qy   1 ATGAGAATGCTTCTGAAATTTGAGTTTGCTAGCTTCTGGGGCTGCCTATGTTTCTGCCTTT 60
           |||| ||||||| ||||||||||||||| |||||||||||| |||||| ||||||||
Db   45 ATGAGGATGCTTCTCGCATTTGAGTTTGCTAGCTTCTGGGGGCTGCCTATGTTTCTGCCATC 104

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTGCGCAGAGACCTTGACACTGCTCTCCACTCAT 120
           |||||| ||||||||||||||||||| || |||||||||||||||||||||||||||||
Db   105 CCCACAGAAAATTCCACAGTGCAAGTGCCATTGGGTGAAAGAGAGAACCTTGGCACTGCTTTCTCCCAT 164

Qy   121 CGAACTTGGCTGATAGGCGGAACCTGATGATTCCTACTCCTGAAAATAAAAAATCAC 180
           ||||||||||||||| || ||||||||||| ||||||||| ||||| |||||||||
Db   165 CGAACTCGCTGATACCCAAGTGCACTGCTGCTTTCATCAT 224

Qy   181 CAACTCTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
           |||||||||||||||||||||||||||||| ||||||||||||| ||||| |||||||
Db   181 CAACTCTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAAGAACCAAAACTGCCCAC 240

RESULT 15
US-09-023-655-1236
Sequence 1236, Application US/09023655
Patent No. 6607879
GENERAL INFORMATION:
  APPLICANT: Cocks, Benjamin G.
  APPLICANT: Susan G. Stuart
  APPLICANT: Jeffrey J. Seilhamer
  TITLE OF INVENTION: COMPOSITION FOR THE DETECTION OF BLOOD CELL GENE
  TITLE OF INVENTION: EXPRESSION
  NUMBER OF SEQUENCES: 1508
  CORRESPONDENCE ADDRESS:
    ADDRESSEE: INCYTE PHARMACEUTICALS, INC.
    STREET: 3174 PORTER DRIVE
    CITY: PALO ALTO
    STATE: CALIFORNIA
    COUNTRY: USA
    ZIP: 94304
  COMPUTER READABLE FORM:
    MEDIUM TYPE: Floppy disk
    COMPUTER: IBM PC compatible
    OPERATING SYSTEM: PC-DOS/MS-DOS
    SOFTWARE: Word Perfect 6.1 for Windows/MS-DOS 6.2
  CURRENT APPLICATION DATA:
    APPLICATION NUMBER: US/09/023,655
    FILING DATE: HEREWITH
    CLASSIFICATION:
  PRIOR APPLICATION DATA:
    APPLICATION NUMBER:
    FILING DATE:
    CLASSIFICATION:
  ATTORNEY/AGENT INFORMATION:
    NAME: Zeller, Karen J.
    REGISTRATION NUMBER: 37,071
    REFERENCE/DOCKET NUMBER: PA-0001 US
  TELECOMMUNICATION INFORMATION:
    TELEPHONE: (650) 855-0555
    TELEFAX: (650) 845-4166
INFORMATION FOR SEQ ID NO: 1236:
  SEQUENCE CHARACTERISTICS:
    LENGTH: 816 base pairs
    TYPE: nucleic acid
    STRANDEDNESS: single
    TOPOLOGY: linear
    IMMEDIATE SOURCE:
      LIBRARY: GENBANK
      CLONE: 9288309
US-09-023-655-1236

Query Match   68.6%; Score 275.6; DB 4; Length 816;
Best Local Similarity   80.3%; Pred. No. 7.6e-81;
Matches   323; Conservative   0; Mismatches   79; Indels   0; Gaps   0;

Qy   1 ATGAGAAATGCTTCTGAAATTTGAGTTTGTCTAGCTCTTGGGCGTGCCTATGTTTCTGCCTTT 60
            ||||| |||||||||||| |||| |||||||||||||||||||||| |||| ||||| |||||
Db   45 ATGAGGATGCTTCTGCATTTGAGTTTGCTAGCTCTTGGAGCTGCCTACGTGTATGCCATC 104

Qy   61 GCTGTAGAAAAATCCCATGAAATAGAACTCGTTGGCAGAGACCTTGCACACTGCTTCCACTCAT 120
            ||||| ||||| |||| |||||| ||| |||||||| ||||||| |||| | ||| | |||| ||
Db   105 CCCACAGAAAATTCCCACACAAGTGCCATTGGTGAAAGAGACCTTGGCACTGCTTTCTACTCAT 164

Qy   121 CGAACTTGGCTGATAGCGCGATGGGAACCTGATGATTCCTACCCCTGAAAATAAAAATCAC 180
            |||||||||||| ||||| |||| ||| |||||||| |||||| |||| ||| |||||||||
Db   165 CGAACCTGCTGCATGATAGCCAATGAGACTTCTGAGGATTCCTGTTCCTCTGTACATAAAAATCAC 224

Qy   181 CAACTGTGCATTAAAGAAGTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
            |||||||||| |||||||||| |||||||||||| |||||| || |||| ||||||||||
Db   225 CAACTGTGCACTGAAGAAAATCTTTCAGGGAATAGGCACACTGGGAGTCAAAACTGTGCAA 284

Qy   241 GGGGAGGCCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACACATAGAGCGC 300
            |||| |||| |||||||||| |||||||||||| || |||||||||||||||||||||||||
Db   285 GGGGGTACTGTGGAAAGACTATTCAAAAACTTGTCCTTAATAAAGAAATACATTGACGGC 344

Qy   301 CAAAAAAAAAGGTGTCCAGGAGAAGAGATGGGACAAAAGTTCCTACCTTGCGAA 360
            |||||||||||| |||||||||||||||||| |||||||||||||||||| |||
Db   345 CAAAAAAAAAGTGTGGAAGAAGAGCAGGAGAGTAAACCAATTCCTAGACTACCTGCAA 404

Qy   361 GTATTTCTTCGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 402
            |||||||||||| |||||| | |||||||||| ||| |||||||
Db   405 GAGTTTCTTGGTGTAATGAACACCGAGTGGGATAATAGAAAGT 446

Qy   225 CAACTGTGCACTGAGAGAAAATCTTTCAGGGAATAGGCACACTGGGAGTCAAAACTGTGCAA 284
            |||||||||| ||| |||||| || ||||| |||| |||||| || |||| ||||||||||
Db   1 CAACTGTGCACTGAAGAGAAGAGCAGGAGAGTAAACCAATTCCTAGACTACCTGCAA 104

Qy   285 GGGGGTACTGTGGAAAGACTATTCAAAAACTTGTCCTTAATAAAGAAATACATTGACGGC 344
            |||| |||| ||||| |||| |||||||||| || |||||||| |||||||||||||||||
Db   105 GGGGAGGCCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACACATAGAGCGC 300

Qy   345 CAAAAAAAAAGTGTGGAAGAAGAGCAGGAGAGTAAACCAATTCCTAGACTACCTGCAA 404
            |||||||||||| |||||||||||||||||| |||||||||||||||||| |||
Db   285 CAAAAAAAAAGGTGTCCAGGAGAAGAGATGGGACAAAAGTTCCTACCTTGCGAA 360

Qy   405 GAGTTTCTTGGTGTAATGAACACCGAGTGGGATAATAGAAAGT 446
            |||||||||||| |||||| | |||||||||| ||| |||||||
Db   361 GTATTTCTTCGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 402

Search completed: August 7, 2005, 18:43:08
Job time : 81.8667 secs

OM nucleic - nucleic search, using sw model

Copyright (c) 1993 - 2005 Compugen Ltd.

GenCore version 5.1.6

Run on: August 7, 2005, 18:32:58 ; Search time 1936.8 Seconds
(without alignments)
10057.309 Million cell updates/sec

Title: US-10-787-382-7
Perfect score: 402
Sequence: 1 atgagaatgcttctgaattc..........ccgagtggacaccggaaagt 402

Scoring table: IDENTITY NUC
Gapop 10.0 , Gapext 1.0
Searched: 4708233 seqs, 2422760795 residues

Total number of hits satisfying chosen parameters: 9416466

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : GenEmbl:*
1: gb_ba:*
2: gb_htg:*
3: gb_in:*
4: gb_om:*
5: gb_ov:*
6: gb_pat:*
7: gb_ph:*
8: gb_pl:*
9: gb_pr:*
10: gb_ro:*
11: gb_sts:*
12: gb_sy:*
13: gb_un:*
14: gb_vi:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

	Result No.	Score	% Query Match	Length	DB	ID	Description
	1	402	100.0	402	6	BD211560	BD211560 Canine an
c	2	402	100.0	402	6	BD211561	BD211561 Canine an
c	3	402	100.0	402	6	AR241538	AR241538 Sequence
c	4	402	100.0	402	6	AR241539	AR241539 Sequence
c	5	402	100.0	402	6	AR254494	AR254494 Sequence
c	6	402	100.0	402	6	AR254495	AR254495 Sequence
c	7	402	100.0	402	4	AF331919	AF331919 Canis fam
c	8	402	100.0	610	6	BD211558	BD211558 Canine an
c	9	402	100.0	610	6	BD211559	BD211559 Canine an
c	10	402	100.0	610	6	AR241536	AR241536 Canine an
c	11	402	100.0	610	6	AR241537	AR241537 Sequence
c	12	402	100.0	610	6	AR254492	AR254492 Sequence
c	13	398.8	99.2	610	6	AR254493	AR254493 Sequence
c	14	402	100.0	405	6	AR300436	AR300436 Sequence
c	15	398.8	99.2	405	6	AX083939	AX083939 Sequence
c	16	345	85.8	345	6	BD211562	BD211562 Canine an
c	17	345	85.8	345	6	BD211563	BD211563 Canine an
c	18	345	85.8	345	6	AR241540	AR241540 Canine an
c	19	345	85.8	345	6	AR241541	AR241541 Sequence
	20	345	85.8	345	6	AR254496	AR254496 Sequence
c	21	345	85.8	345	6	AR254497	AR254497 Sequence
c	22	344.4	85.7	838	4	AF025436	AF025436 Felis cat
c	23	338.6	84.2	405	4	AF068770	AF068770 Felis cat
c	24	335.4	83.4	405	4	U91947	ECU91947 Equus cabal
c	25	329.8	82.0	356	4	AF091133	AF091133 Canis fam
c	26	326.8	81.3	529	4	Z67872	BTINTLEU5 B.taurus mR
c	27	326.8	81.3	529	4	AJ133452	SSC133452 Sus scrof
c	28	325.2	80.9	405	4	SSC010088	SSC10088 Sus scrof
c	29	316.2	78.7	520	4	U35038	OAU35038 Ovis aries
c	30	281.2	70.0	354	4	AF051372	AF051372 Felis cat
c	31	277.2	69.0	405	9	AF294756	AF294756 Saimiri s
c	32	277.2	69.0	459	9	BC066282	BC066282 Homo sapi
c	33	277.2	69.0	405	9	CQ721603	CQ721603 Sequence
c	34	277.2	69.0	816	6	E01639	E01639 cDNA encodi
c	35	277.2	69.0	816	6	E13591	E13591 cDNA encod
c	36	277.2	69.0	816	6	X04688	HSBCDFIA Human mRNA
c	37	275.6	68.6	816	6	AR380691	AR380691 Sequence
c	38	275.6	68.6	816	6	X12705	HSIL5R H.sapiens m
c	39	275.6	68.6	858	6	AX766521	AX766521 Sequence
c	40	275.6	68.6	858	6	AX766523	AX766523 Sequence
c	41	272.4	67.8	405	9	L26033	CEVIN5A Cercocebus
c	42	270.8	67.4	405	9	L26033	L26033 Cercocebus
c	43	250	62.2	343	6	U19848	MMU19848 Macaca mula
c	44	240.4	59.8	421	12	AX083948	AX083948 Sequence
c	44	240.4	59.8	421	6	M39949	SYNIL5A Synthetic h
c	45	240.4	59.8	4946	1	Y07702	PPVIRES Plasmid pPV

ALIGNMENTS

RESULT 1
BD211560
BD211560

LOCUS   BD211560   402 bp   DNA   linear   PAT 17-JUL-2003
DEFINITION Canine and feline immunoregulatory proteins, nucleic acid molecules
           and method of using the same.
ACCESSION BD211560
VERSION   BD211560.1 GI:33021330
KEYWORDS   JP 2002516104-A/66.
SOURCE   Canis familiaris (dog)
ORGANISM   Canis familiaris
           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
           Mammalia; Eutheria; Laurasiatheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE 1 (bases 1 to 402)
  AUTHORS Sim,G.; Yang,S.; Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine and feline immunoregulatory proteins, nucleic acid molecules
           and method of using the same
  JOURNAL Patent: JP 2002516104-A 66 04-JUN-2002;
           HESKA CORP
COMMENT   OS   Canis familiaris (dog)
           PN   JP 2002516104-A/66
           PD   04-JUN-2002
           PF   28-MAY-1999 JP 2000551002
           PR   29-MAY-1998 US 60/087306
           PI   GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
           C12N15/09,A61K31/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
           PC   A61K39/395,
           PC   A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,
           PC   C07K14/54,
           PC   C07K14/56,C07K14/705,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
           G01N33/15,
           PC   G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC
           and feline immunoregulatory proteins, nucleic acid CC
           molecules and
           CC   method of using the same CC
           FH   Key   Location/Qualifiers
           FT   source   1..402
           FT   /organism="Canis familiaris (dog)'.
FEATURES   Location/Qualifiers
     source   1..402
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9615"

```
ORIGIN
Qy    Query Match
      Best Local Similarity   100.0%;   Score 402;  DB 6;  Length 402;
      Matches 402;  Conservative   0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy      1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTGCCTAGTTGTTTCTGCCTTT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTGCCTAGTTGTTTCTGCCTTT 60

Qy     61 GCTGTAGAAAATCCCATGAATAGACTGGTGGTGCCAGAGACCCTTGACACTGCTCTCCACTCAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 GCTGTAGAAAATCCCATGAATAGACTGGTGGTGCCAGAGACCCTTGACACTGCTCTCCACTCAT 120

Qy    121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTCACTCCTCTGAAAATAAAAATCAC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTCACTCCTCTGAAAATAAAAATCAC 180

Qy    181 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240

Qy    241 GGGGAGGCTGTGGATAAAACTATTCCAAAACTGTCTTTAATAAAAGAACACATAGAGCGC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 GGGGAGGCTGTGGATAAAACTATTCCAAAACTGTCTTTAATAAAAGAACACATAGAGCGC 300

Qy    301 CAAAAAAAAAGGTGTTGCAGGAGAGAAGATGGAGAAAGTTTCCTTAGTACTACCTGCAA 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 CAAAAAAAAAGGTGTTGCAGGAGAGAAGATGGAGAAAGTTTCCTTAGTACTACCTGCAA 360

Qy    361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCCGGAAAGT 402
          |||||||||||||||||||||||||||||||||||||||||||
Db    361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCCGGAAAGT 402
```

```
RESULT 2
LOCUS         BD211561/c
DEFINITION    Canine and feline immunoregulatory proteins, nucleic acid molecules
              and method of using the same.

LOCUS         BD211561              402 bp      DNA      linear   PAT 17-JUL-2003
DEFINITION    Canine and feline immunoregulatory proteins, nucleic acid molecules
              and method of using the same.
ACCESSION     BD211561
VERSION       BD211561.1  GI:33021331
KEYWORDS      JP 2002516104-A/67.
SOURCE        Canis familiaris
  ORGANISM    Canis familiaris (dog)
              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
              Mammalia; Eutheria; Laurasiatheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE     1  (bases 1 to 402)
  AUTHORS     Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE       Canine and feline immunoregulatory proteins, nucleic acid molecules
              and method of using the same
  JOURNAL     Patent: JP 2002516104-A 67 04-JUN-2002;
              HESKA CORP
COMMENT       OS   Canis familiaris (dog)
              PN   JP 2002516104-A/67
              PD   04-JUN-2002
              PF   28-MAY-1999 JP 2000551002
              PR   29-MAY-1998 US 60/087306
              PI   GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
              C12N15/09,A61K31/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
              PC   A61K39/395,
              PC   A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,C07K14/535,
              PC   C07K14/54,
              PC   C07K14/56,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
              G01N33/15,
              PC   G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC   Canine
              and feline immunoregulatory proteins, nucleic acid  CC
              molecules and
              CC   method of using the same
FEATURES             Location/Qualifiers
     source          1..402
                     /organism="Canis familiaris (dog)".
```

```
                                            source          1..402
                                                            /organism="Canis familiaris"
                                                            /mol_type="genomic DNA"
                                                            /db_xref="taxon:9615"

ORIGIN
Qy    Query Match
      Best Local Similarity   100.0%;   Score 402;  DB 6;  Length 402;
      Matches 402;  Conservative   0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy      1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTGCCTAGTTGTTTCTGCCTTT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    402 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTGCCTAGTTGTTTCTGCCTTT 343

Qy     61 GCTGTAGAAAATCCCATGAATAGACTGGTGGTGCCAGAGACCCTTGACACTGCTCTCCACTCAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    342 GCTGTAGAAAATCCCATGAATAGACTGGTGGTGCCAGAGACCCTTGACACTGCTCTCCACTCAT 283

Qy    121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTCACTCCTCTGAAAATAAAAATCAC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    282 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTCACTCCTCTGAAAATAAAAATCAC 223

Qy    181 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    222 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 163

Qy    241 GGGGAGGCTGTGGATAAAACTATTCCAAAACTGTCTTTAATAAAAGAACACATAGAGCGC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    162 GGGGAGGCTGTGGATAAAACTATTCCAAAACTGTCTTTAATAAAAGAACACATAGAGCGC 103

Qy    301 CAAAAAAAAAGGTGTTGCAGGAGAGAAGATGGAGAAAGTTTCCTTAGTACTACCTGCAA 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    102 CAAAAAAAAAGGTGTTGCAGGAGAGAAGATGGAGAAAGTTTCCTTAGTACTACCTGCAA 43

Qy    361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCCGGAAAGT 402
          |||||||||||||||||||||||||||||||||||||||||||
Db     42 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCCGGAAAGT 1
```

```
RESULT 3
LOCUS         AR241538
DEFINITION    Sequence 83 from patent US 6471957.

LOCUS         AR241538              402 bp      DNA      linear   PAT 20-DEC-2002
DEFINITION    Sequence 83 from patent US 6471957.
ACCESSION     AR241538
VERSION       AR241538.1  GI:27287247
KEYWORDS      .
SOURCE        Unknown.
  ORGANISM    Unknown.
              Unclassified.
REFERENCE     1  (bases 1 to 402)
  AUTHORS     Sim.G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE       Canine IL-4 immunoregulatory proteins and uses thereof
  JOURNAL     Patent: US 6471957-A 83 29-OCT-2002;
FEATURES             Location/Qualifiers
     source          1..402
                     /organism="unknown"
                     /mol_type="genomic DNA"

ORIGIN
Qy    Query Match
      Best Local Similarity   100.0%;   Score 402;  DB 6;  Length 402;
      Matches 402;  Conservative   0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy      1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTGCCTAGTTGTTTCTGCCTTT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTGCCTAGTTGTTTCTGCCTTT 60

Qy     61 GCTGTAGAAAATCCCATGAATAGACTGGTGGTGCCAGAGACCCTTGACACTGCTCTCCACTCAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 GCTGTAGAAAATCCCATGAATAGACTGGTGGTGCCAGAGACCCTTGACACTGCTCTCCACTCAT 120

Qy    121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTCACTCCTCTGAAAATAAAAATCAC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
```

```
Db  121 CGAACTGTGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATACAC 180
Qy  181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGACACAAAACTGCCCAC 240
Db  181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGACACAAAACTGCCCAC 240
Qy  241 GGGGAGGCTGTGGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
Db  241 GGGGAGGCTGTGGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
Qy  301 CAAAAAAAAGGTGTCCAGGAGAAAGATGGGAGTGACAAAGTTCCTAGACTACCTGCAA 360
Db  301 CAAAAAAAAGGTGTCCAGGAGAAAGATGGGAGTGACAAAGTTCCTAGACTACCTGCAA 360
Qy  361 GTATTTCTTGGTGTGTAATAATAAACACCGAGTGGGACACCGGAAAGT 402
Db  361 GTATTTCTTGGTGTGTAATAATAAACACCGAGTGGGACACCGGAAAGT 402

RESULT 4
LOCUS       AR241539/c
LOCUS       AR241539       402 bp    DNA    linear    PAT 20-DEC-2002
DEFINITION  Sequence 84 from patent US 6471957.
ACCESSION   AR241539
VERSION     AR241539.1  GI:27287248
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Canine Il-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 84 29-OCT-2002;
FEATURES             Location/Qualifiers
     source          1..402
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match  100.0%;  Score 402;  DB 6;  Length 402;
Best Local Similarity  100.0%;  Pred. No. 1e-100;
Matches  402;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy    1 ATGAGAATGCTTCTGAATTGAGTTGCTAGCTCCTTGGGGGCTGCCTTT 60
        ||||||||||||||||||||||||||||||||||||||||||||||||
Db  402 ATGAGAATGCTTCTGAATTGAGTTGCTAGCTCCTTGGGGGCTGCCTTT 343

Qy   61 GCTGTGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCCCACTCAT 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  342 GCTGTGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCCCACTCAT 283

Qy  121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  282 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 223

Qy  181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGACACAAAACTGCCCAC 240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  222 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGACACAAAACTGCCCAC 163

Qy  241 GGGGAGGCTGTGGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  162 GGGGAGGCTGTGGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 103

Qy  301 CAAAAAAAAGGTGTCCAGGAGAAAGATGGGAGTGACAAAGTTCCTAGACTACCTGCAA 360
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  102 CAAAAAAAAGGTGTCGAGGAGAAAGATGGGAGTGACAAAGTTCCTAGACTACCTGCAA 43

Qy  361 GTATTTCTTGGTGTGTAATAATAAACACCGAGTGGGACACCGGAAAGT 402
        ||||||||||||||||||||||||||||||||||||||||||||||||
Db   42 GTATTTCTTGGTGTGTAATAATAAACACCGAGTGGGACACCGGAAAGT 1

RESULT 5
```

```
AR254494
LOCUS       AR254494       402 bp    DNA    linear    PAT 20-DEC-2002
DEFINITION  Sequence 83 from patent US 6482403.
ACCESSION   AR254494
VERSION     AR254494.1  GI:27303382
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Caniney Il-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 83 19-NOV-2002;
FEATURES             Location/Qualifiers
     source          1..402
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match  100.0%;  Score 402;  DB 6;  Length 402;
Best Local Similarity  100.0%;  Pred. No. 1e-100;
Matches  402;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy    1 ATGAGAATGCTTCTGAATTGAGTTGCTAGCTCCTTGGGGGCTGCCTTT 60
        ||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 ATGAGAATGCTTCTGAATTGAGTTGCTAGCTCCTTGGGGGCTGCCTTT 60

Qy   61 GCTGTGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCCCACTCAT 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCCCACTCAT 120

Qy  121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180

Qy  181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGACACAAAACTGCCCAC 240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGACACAAAACTGCCCAC 240

Qy  241 GGGGAGGCTGTGGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 GGGGAGGCTGTGGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300

Qy  301 CAAAAAAAAGGTGTGTGGATAAAACTATTCCAAAACTGTCTTTAATAAAAGAACACCAC 360
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301 CAAAAAAAAGGTGTGTGGATAAAACTATTCCAAAACTGTCTTTAATAAAAGAACACCAC 360

Qy  361 GTATTTCTTGGTGTGTAATAATAAACACCGAGTGGGACACCGGAAAGT 402
        ||||||||||||||||||||||||||||||||||||||||||||||||
Db  361 GTATTTCTTGGTGTGTAATAATAAACACCGAGTGGGACACCGGAAAGT 402

RESULT 6
AR254495/c
LOCUS       AR254495       402 bp    DNA    linear    PAT 20-DEC-2002
DEFINITION  Sequence 84 from patent US 6482403.
ACCESSION   AR254495
VERSION     AR254495.1  GI:27303383
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Caniney Il-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 84 19-NOV-2002;
FEATURES             Location/Qualifiers
     source          1..402
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match  100.0%;  Score 402;  DB 6;  Length 402;
```

RESULT 7
AF331919

```
LOCUS       AF331919    610 bp    mRNA    linear    MAM 04-OCT-2001
DEFINITION  Canis familiaris interleukin-5 mRNA, complete cds.
ACCESSION   AF331919
VERSION     AF331919.1  GI:1591980
KEYWORDS    .
SOURCE      Canis familiaris (dog)
ORGANISM    Canis familiaris
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1  (bases 1 to 610)
AUTHORS     Yang,S., Sellins,K.S., Weber,E. and McCall,C.
TITLE       Canine interleukin-5: molecular characterization of the gene and
            expression of biologically active recombinant protein
JOURNAL     J. Interferon Cytokine Res. 21 (6), 361-367 (2001)
MEDLINE     21334408
PUBMED      11440633
REFERENCE   2  (bases 1 to 610)
AUTHORS     Yang,S.
TITLE       Direct Submission
JOURNAL     Submitted (22-DEC-2000) Immunology, Heska Corporation, 1613
            Prospect Parkway, Ft Collins, CO 80525, USA
FEATURES             Location/Qualifiers
     source          1..610
                     /organism="Canis familiaris"
                     /mol_type="mRNA"
                     /db_xref="taxon:9615"
     5'UTR           1..28
     CDS             29..433
                     /codon_start=1
                     /product="interleukin-5"
                     /note="IL-5"
                     /protein_id="AAL10715.1"
                     /db_xref="GI:15919181"
                     /translation="MRMLNLSILALGNAYVSAPAVENPMNRLVAETLTLLSTHRTWL
                     IGDGNLMIPTPENKNHQLCIKEVFQGIDTLKNQTAHGEAVDKLFQNLSLIKEHIERQK
                     KRCAGERWRVTKFLDYLQVFLGVINTEWPES"
     3'UTR           433..610
ORIGIN
```

Best Local Similarity 100.0%; Pred. No. 1e-100; Mismatches 0; Indels 0; Gaps 0;
Matches 402; Conservative 0;

```
Qy     1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTGCCTTATGTTTCTGCCTTT  60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   402 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTGCCTTATGTTTCTGCCTTT 343

Qy    61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT  120
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   342 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 283

Qy   121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAATCAC  180
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   282 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAATCAC 223

Qy   181 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGCCCAC  240
         ||||||||||||||||||||||||||||||||||||||||||||||||
Db   222 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGCCCAC 163

Qy   241 GGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTTTAATAAAAGAGAACGCGC  300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   162 GGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTTTAATAAAAGAGAACGCGC 103

Qy   301 CAAAAAAAAAAGGTGTGCCAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA  360
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   102 CAAAAAAAAAAGGTGTGCCAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 43

Qy   361 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
         ||||||||||||||||||||||||||||||||||||||||||||
Db    42 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 1
```

RESULT 8
BD211558

Query Match 100.0%; Score 402; DB 4; Length 610;
Best Local Similarity 100.0%; Conservative 0; Mismatches 0; Pred. No. 9.8e-101; Indels 0; Gaps 0;
Matches 402;

```
LOCUS       BD211558    610 bp    DNA    linear    PAT 17-JUL-2003
DEFINITION  Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same.
ACCESSION   BD211558
VERSION     BD211558.1  GI:33021328
KEYWORDS    JP 2002516104-A/64.
SOURCE      Canis familiaris (dog)
ORGANISM    Canis familiaris
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1  (bases 1 to 610)
AUTHORS     Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
TITLE       Canine and feline immunoregulatory proteins, nucleic acid
            molecules and method of using the same
JOURNAL     Patent: JP 2002516104-A 64 04-JUN-2002;
            HESKA CORP
COMMENT     OS   Canis familiaris (dog)
            PN   JP 2002516104-A/64
            PD   04-JUN-2002
            PF   28-MAY-1999 JP 2000551002
            PR   29-MAY-1998 US 60/087306
            PI   GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
                 C12N15/09,A61K31/7088,A61K38/00,A61K39/00,A61K39/395,
            PC   A61K39/395,
            PC   A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/535,
            PC   C07K14/54,
            PC   C07K14/56,C07K14/705,C07K16/24,C07K16/28,C12N1/21,C07K14/475,
            PC   G01N33/15,
            PC   G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 Canine
                 and feline immunoregulatory proteins, nucleic acid molecules
                 and method of using the same
            CC   method of using the same
FEATURES             Location/Qualifiers
     source          1..610
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
FH   Key             Location/Qualifiers
FT   CDS             (29)..(430)
```

```
Qy     1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTGCCTTATGTTTCTGCCTTT  60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTGCCTTATGTTTCTGCCTTT  88

Qy    61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT  120
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    89 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 148

Qy   121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAATCAC  180
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   149 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAATCAC 208

Qy   181 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGCCCAC  240
         ||||||||||||||||||||||||||||||||||||||||||||||||
Db   209 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGCCCAC 268

Qy   241 GGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTTTAATAAAAGAGAACGCGC  300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   269 GGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTTTAATAAAAGAGAACGCGC 328

Qy   301 CAAAAAAAAAAGGTGTGCCAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA  360
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   329 CAAAAAAAAAAGGTGTGCCAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388

Qy   361 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
         ||||||||||||||||||||||||||||||||||||||||||||
Db   389 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 430
```

ORIGIN
/db_xref="taxon:9615"

Query Match   100.0%;   Score 402;   DB 6;   Length 610;
Best Local Similarity   100.0%;   Pred. No. 9.8e-101;
Matches 402;   Conservative   0;   Mismatches   0;   Indels   0;   Gaps   0;

```
Qy      1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTCTGCCTTT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTCTGCCTTT 88

Qy     61 GCTGTGAGAAAATCCCATGAATAGACTGGTGCGAGAGACCTTGACACTGCTCTCCACTCAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     89 GCTGTGAGAAAATCCCATGAATAGACTGGTGCGAGAGACCTTGACACTGCTCTCCACTCAT 148

Qy    121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    149 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 208

Qy    181 CAACTGTGCATTAAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCAC 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    209 CAACTGTGCATTAAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCAC 268

Qy    241 GGGGAGGCTGTGGATAAAACTATTCCAAAAACTGTCTCTTAATAAAAGAACACATAGAGCGC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    269 GGGGAGGCTGTGGATAAAACTATTCCAAAAACTGTCTCTTAATAAAAGAACACATAGAGCGC 328

Qy    301 CAAAAAAAAAAGGTGTGCAGGAGAAGATGAGGAGGTGACAAAAGTTTCTTAGTACTACCTGCAA 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    329 CAAAAAAAAAAGGTGTGCAGGAGAAGATGAGGAGGTGACAAAAGTTCCTTAGTACTACCTGCAA 388

Qy    361 GTATTTCTTGGTGTGTAATAAAACACCCGAGTGGACACCCGGAAAGT 402
          |||||||||||||||||||||||||||||||||||||||||||||||
Db    389 GTATTTCTTGGTGTGTAATAAAACACCCGAGTGGACACCCGGAAAGT 430
```

RESULT 9
BD211559/c
LOCUS   BD211559   610 bp   DNA   linear   PAT 17-JUL-2003
DEFINITION   Canine and feline immunoregulatory proteins, nucleic acid molecules
               and method of using the same.
ACCESSION   BD211559
VERSION   BD211559.1 GI:33021329
KEYWORDS   JP 2002516104-A/65.
SOURCE   Canis familiaris
  ORGANISM   Canis familiaris (dog)
               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
               Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1 (bases 1 to 610)
  AUTHORS   Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine and feline immunoregulatory proteins, nucleic acid molecules
               and method of using the same
  JOURNAL   Patent: JP 2002516104-A 65 04-JUN-2002;
               HESKA CORP
COMMENT   OS Canis familiaris (dog)
               PN JP 2002516104-A/65
               PD 04-JUN-2002
               PF 28-MAY-1999 JP 2000551002
               PR 29-MAY-1998 US 60/087306
               PI GEKKEE SIM,SHUHUN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
               C12N15/09,A61K31/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
               PC A61K39/395,A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,
               PC C07K14/54,
               PC C07K14/56,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
               G01N33/15,
               PC G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC Canine
               and feline immunoregulatory proteins, nucleic acid CC
               molecules and
               CC method of using the same
FEATURES   Key   Location/Qualifiers
FH
FT source   1..610
FT   /organism="Canis familiaris (dog)".

FEATURES   source   Location/Qualifiers
                                1..610
                                /organism="Canis familiaris"
                                /mol_type="genomic DNA"
                                /db_xref="taxon:9615"
ORIGIN

Query Match   100.0%;   Score 402;   DB 6;   Length 610;
Best Local Similarity   100.0%;   Pred. No. 9.8e-101;
Matches 402;   Conservative   0;   Mismatches   0;   Indels   0;   Gaps   0;

```
Qy      1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTCTGCCTTT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    582 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTCTGCCTTT 523

Qy     61 GCTGTGAGAAAATCCCATGAATAGACTGGTGCGAGAGACCTTGACACTGCTCTCCACTCAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    522 GCTGTGAGAAAATCCCATGAATAGACTGGTGCGAGAGACCTTGACACTGCTCTCCACTCAT 463

Qy    121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    462 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 403

Qy    121 CAACTGTGCATTAAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCAC 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    402 CAACTGTGCATTAAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCAC 343

Qy    241 GGGGAGGCTGTGGATAAAACTATTCCAAAAACTGTCTCTTAATAAAAGAACACATAGAGCGC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    402 GGGGAGGCTGTGGATAAAACTATTCCAAAAACTGTCTCTTAATAAAAGAACACATAGAGCGC 343

Qy    301 CAAAAAAAAAAGGTGTGCAGGAGAAGATGAGGAGGTGACAAAAGTTTCTTAGTACTACCTGCAA 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    342 CAAAAAAAAAAGGTGTGCAGGAGAAGATGAGGAGGTGACAAAAGTTCCTTAGTACTACCTGCAA 283

Qy    361 GTATTTCTTGGTGTGTAATAAAACACCCGAGTGGACACCCGGAAAGT 402
          |||||||||||||||||||||||||||||||||||||||||||||||
Db    282 GTATTTCTTGGTGTGTAATAAAACACCCGAGTGGACACCCGGAAAGT 223
```

RESULT 10
AR241536
LOCUS   AR241536   610 bp   DNA   linear   PAT 20-DEC-2002
DEFINITION   Sequence 80 from patent US 6471957.
ACCESSION   AR241536
VERSION   AR241536.1 GI:27287245
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM   Unknown.
               Unclassified.
REFERENCE   1 (bases 1 to 610)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine IL-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 80 29-OCT-2002;
FEATURES   source   Location/Qualifiers
                                1..610
                                /organism="unknown"
                                /mol_type="genomic DNA"
ORIGIN

Query Match   100.0%;   Score 402;   DB 6;   Length 610;
Best Local Similarity   100.0%;   Pred. No. 9.8e-101;
Matches 402;   Conservative   0;   Mismatches   0;   Indels   0;   Gaps   0;

```
Qy      1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTCTGCCTTT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTCTGCCTTT 88

Qy     61 GCTGTGAGAAAATCCCATGAATAGACTGGTGCGAGAGACCTTGACACTGCTCTCCACTCAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     89 GCTGTGAGAAAATCCCATGAATAGACTGGTGCGAGAGACCTTGACACTGCTCTCCACTCAT 148

Qy    121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
```

Db   149 CGAACTTGGCTGATAGGCGATGGGGAACCTGATCCTACTCCTGAAAATAAAAATCAC 208
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Qy   181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   209 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 268
Qy   241 GGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   269 GGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 328
Qy   301 CAAAAAAAAAGGTGTTGCAGGAGAACAATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   329 CAAAAAAAAAGGTGTGCAGGAGAACAATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388
Qy   361 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 402
          ||||||||||||||||||||||||||||||||||||||||||||
Db   389 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 430

RESULT 11
LOCUS   AR241537   610 bp   DNA   linear   PAT 20-DEC-2002
AR241537/c
DEFINITION Sequence 82 from patent US 6471957.
ACCESSION   AR241537
VERSION   AR241537.1 GI:27287246
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 610)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine IL-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 82 29-OCT-2002;
FEATURES   Location/Qualifiers
     source   1..610
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

  Query Match   100.0%; Score 402; DB 6; Length 610;
  Best Local Similarity   100.0%;
  Matches 402; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 ATGAGAAATGCTTCTCGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT   60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   582 ATGAGAAATGCTTCTCGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT 523
Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCCTTGACACTGCCTCTCCACTCAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   522 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCCTTGACACTGCCTCTCCACTCAT 463
Qy   121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATCCTACTCCTGAAAATAAAAATCAC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   462 CGAACTTGGCTGATAGGCGATGGGGAACCTGATCCTACTCCTGAAAATAAAAATCAC 403
Qy   181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   402 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 343
Qy   241 GGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   342 GGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 283
Qy   301 CAAAAAAAAAGGTGTTGCAGGAGAACAATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   282 CAAAAAAAAAGGTGTGCAGGAGAACAATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 223
Qy   361 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 402
          ||||||||||||||||||||||||||||||||||||||||||||
Db   222 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 181

RESULT 12
LOCUS   AR254492   610 bp   DNA   linear   PAT 20-DEC-2002
AR254492
DEFINITION Sequence 80 from patent US 6482403.
ACCESSION   AR254492
VERSION   AR254492.1 GI:27303380
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 610)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Caniney IL-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 80 19-NOV-2002;
FEATURES   Location/Qualifiers
     source   1..610
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

  Query Match   100.0%; Score 402; DB 6; Length 610;
  Best Local Similarity   100.0%;
  Matches 402; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 ATGAGAAATGCTTCTCGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT   60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   29 ATGAGAAATGCTTCTCGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT   88
Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCCTTGACACTGCCTCTCCACTCAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   89 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCCTTGACACTGCCTCTCCACTCAT 148
Qy   121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATCCTACTCCTGAAAATAAAAATCAC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   149 CGAACTTGGCTGATAGGCGATGGGGAACCTGATCCTACTCCTGAAAATAAAAATCAC 208
Qy   181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   209 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 268
Qy   241 GGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   269 GGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 328
Qy   301 CAAAAAAAAAGGTGTTGCAGGAGAACAATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   329 CAAAAAAAAAGGTGTGCAGGAGAACAATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388
Qy   361 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 402
          ||||||||||||||||||||||||||||||||||||||||||||
Db   389 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 430

RESULT 13
LOCUS   AR254493   610 bp   DNA   linear   PAT 20-DEC-2002
AR254493/c
DEFINITION Sequence 82 from patent US 6482403.
ACCESSION   AR254493
VERSION   AR254493.1 GI:27303381
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 610)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Caniney IL-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 82 19-NOV-2002;
FEATURES   Location/Qualifiers
     source   1..610
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

RESULT 14

```
LOCUS       AR300436                 405 bp    DNA     linear   PAT 12-JUN-2003
DEFINITION  Sequence 1 from patent US 6537781.
ACCESSION   AR300436
VERSION     AR300436.1  GI:31687875
KEYWORDS
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 405)
  AUTHORS   Guo,H., Lawton,R., Mermer,B. and Aiyappa,A.P.
  TITLE     Methods and compositions concerning canine interleukin 5
  JOURNAL   Patent: US 6537781-A 1 25-MAR-2003;
FEATURES             Location/Qualifiers
     source          1..405
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN
```

Query Match 100.0%; Score 402; DB 6; Length 610;
Best Local Similarity 100.0%; Pred. No. 9.8e-101;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  582 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 523

Qy   61 GCTGTGAGAAAATCCCATGAATAGAGACTGGTGTGGCCAGAGACCTTGACACTGTCTCCAC 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  522 GCTGTGAGAAAATCCCATGAATAGAGACTGGTGTGGCCAGAGACCTTGACACTGTCTCCAC 463

Qy  121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 180
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  462 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 403

Qy  181 CAACTGTGCATTAAAGAAAGTTTTTTCAGGGTATAGACACACATTGAAGAACCAAAACTGCCCAC 240
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  402 CAACTGTGCATTAAAGAAAGTTTTTTCAGGGTATAGACACACATTGAAGAACCAAAACTGCCCAC 343

Qy  241 GGGGAGGCGCTGTGGATAAACTATATTCCAAAACTTGTTCTTAATAAAAGAACACATAGAGGGC 300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  342 GGGGAGGCGCTGTGGATAAACTATATTCCAAAACTTGTTCTTAATAAAAGAACACATAGAGGGC 283

Qy  301 CAAAAAAAAAGGTGTGCAGGAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTTACCTGCAA 360
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  282 CAAAAAAAAAGGTGTGCAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTTACCTGCAA 223

Qy  361 GTATTTCTTGGTGTGTTAATAAAACACCGAGTGACACCGGAAAGT 402
        |||||||||||||||||||||||||||||||||||||||||||||
Db  222 GTATTTCTTGGTGTAATAAAACACCGAGTGACACCGGAAAGT 181
```

RESULT 15

```
LOCUS       AX083939                 405 bp    DNA     linear   PAT 22-JUN-2001
DEFINITION  Sequence 1 from Patent WO0111049.
ACCESSION   AX083939
VERSION     AX083939.2  GI:14532940
KEYWORDS
SOURCE      Canis familiaris (dog)
  ORGANISM  Canis familiaris
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1
  AUTHORS   Guo,H., Lawton,R., Mermer,B. and Aiyappa,A.P.
  TITLE     Methods and compositions concerning canine interleukin 5
  JOURNAL   Patent: WO 0111049-A 1 15-FEB-2001;
            IDEXX LABORATORIES, INC. (US)
COMMENT     On Jun 24, 2001 this sequence version replaced gi:13185501.
FEATURES             Location/Qualifiers
     source          1..405
                     /organism="Canis familiaris"
                     /mol_type="unassigned DNA"
                     /db_xref="taxon:9615"
ORIGIN
```

Query Match 99.2%; Score 398.8; DB 6; Length 405;
Best Local Similarity 99.5%; Pred. No. 7.8e-100;
Matches 400; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

```
Qy    1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 60

Qy   61 GCTGTGAGAAAATCCCATGAATAGAGACTGGTGTGGCCAGAGACCTTGACACTGTCTCCAC 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTGAGAAAATCCCATGAATAGAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCAC 120

Qy  121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 180
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCAC 180

Qy  181 CAACTGTGCATTAAAGAAAGTTTTTTCAGGGTATAGACACACATTGAAGAACCAAAACTGCCCAC 240
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 CAACTGTGCATTAAAGAAAGTTTTTTCAGGGTATAGACACACATTGAAGAACCAAAACTGCCCAC 240

Qy  241 GGGGAGGCGCTGTGGATAAACTATATTCCAAAACTTGTTCTTAATAAAAGAACACATAGAGGGC 300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 GGGGAGGCGCTGTGGATAAACTATATTCCAAAACTTGTTCTTAATAAAAGAACACATAGAGGGC 300

Qy  301 CAAAAAAAAAGGTGTGCAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTTACCTGCAA 360
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301 CAAAAAAAAAGGTGTGCAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTTACCTGCAA 360

Qy  361 GTATTTCTTGGTGTAATAAAACACCGAGTGGACACCGGAAAGT 402
        ||||||||||||||||||||||||||||||| |||||||||||
Db  361 GTATTTCTTGGTGTAATAAAACACCGAGTGGACACCGGAAAGT 402
```

Search completed: August 8, 2005, 05:12:04
Job time : 1936.8 secs

OM nucleic - nucleic search, using sw model

GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

Run on: August 7, 2005, 19:25:03 ; Search time 269.467 Seconds
(without alignments)
8831.282 Million cell updates/sec

Title: US-10-787-382-7
Perfect score: 402
Sequence: 1 atgagaatgcttctgaattt............ccgagtcggacaccggaagt 402

Scoring table: IDENTITY NUC
Gapop 10.0, Gapext 1.0
Searched: 4390206 seqs, 295987066T residues

Total number of hits satisfying chosen parameters: 8780412

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :   N_Geneseq_16Dec04:*
1: geneseqn1980s:*
2: geneseqn1990s:*
3: geneseqn2000s:*
4: geneseqn2001as:*
5: geneseqn2001bs:*
6: geneseqn2002as:*
7: geneseqn2002bs:*
8: geneseqn2003as:*
9: geneseqn2003bs:*
10: geneseqn2003cs:*
11: geneseqn2003ds:*
12: geneseqn2004as:*
13: geneseqn2004bs:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	402	100.0	402	3	AAZ55548	Aaz55548 Canine in
2	402	100.0	402	3	AAZ55549	Aaz55549 Canine in
3	402	100.0	610	3	AAZ55546	Aaz55546 Canine in
4	402	100.0	610	3	AAZ55547	Aaz55547 Canine in
c 5	398.8	99.2	405	4	AAF74300	Aaf74300 Canine in
c 6	345	85.8	345	4	AAZ55550	Aaz55550 Canine ma
7	345	85.8	345	3	AAZ55551	Aaz55551 Canine ma
c 8	344.4	85.7	838	3	AAZ44265	Aaz44265 Porcine I
9	316.2	78.7	520	2	AAT50755	Aat50755 Ovine IL-
10	311.8	77.6	399	2	AAT50756	Aat50756 Ovine IL-
11	287.4	71.5	393	4	AAF74306	Aaf74306 Canine in
12	277.2	69.0	816	3	AAA34857	Aaa34857 Human ade
13	277.2	69.0	816	3	AAA13338	Aaa13338 Human int
14	277.2	69.0	816	3	AAF20979	Aaf20979 Human low
15	277.2	69.0	816	10	ADG33104	Adg33104 Human DNA
16	277.2	69.0	816	10	ABZ96673	Abz96673 Human nuc
17	277.2	69.0	816	10	ACF63368	Acf63368 Human int
18	277.2	69.0	816	13	ADP56009	Adp56009 Human PRO
19	277.2	69.0	4057	3	AAA34858	Aaa34858 Human ade
20	277.2	69.0	4057	3	AAF20980	Aaf20980 Human low
21	277.2	69.0	4057	10	AB296674	Abz96674 Human nuc
22	277.2	69.0	4057	11	ABD20523	Abd20523 Human pul
23	277.2	69.0	4057	11	ABD20522	Abd20522 Human pul
24	275.6	68.6	402	1	AAN81380	Aan81380 A human B
25	275.6	68.6	816	11	ADI31910	Adi31910 Human CDN
26	275.6	68.6	858	9	AAL61293	Aal61293 hIL5-P2-P
27	275.6	68.6	858	9	AAL61294	Aal61294 hIL5-P30-
28	252	62.7	252	4	AAF74305	Aaf74305 Canine in
29	231.4	57.6	864	9	AAL61296	Aal61296 hIL5.36 v
30	231.4	57.6	864	9	AAL61295	Aal61295 hIL5.37 v
31	229.4	57.1	385	3	AAA43842	Aaa43842 Human sec
32	224.6	55.9	370	1	AAN91647	Aan91647 Synthetic
33	206.4	51.3	399	2	AAV64061	Aav64061 T cell re
34	206.4	51.3	402	2	AAT14921	Aat14921 T cell re
35	206.4	51.3	1533	1	AAN82431	Aan82431 B cell di
36	206.4	51.3	1534	2	AAT88013	Aat88013 Murine In
37	206.4	51.3	1623	2	AAV64062	Aav64062 Plasmid p
38	206.4	51.3	1623	2	AAT14925	Aat14925 T cell re
39	206.2	51.3	377	2	AAV01595	Aav01595 Human int
40	201	50.0	1945	10	ADB53890	Adb53890 Primary r
41	200	49.8	481	1	AAN80461	Aan80461 Clone 115
42	196.4	48.9	348	2	AAT14922	Aat14922 T cell re
43	194.6	48.4	342	2	AAT14923	Aat14923 T cell re
44	194.2	48.3	339	2	AAT14924	Aat14924 T cell re
45	178.4	44.4	375	3	AAC68870	Aac68870 Modified

ALIGNMENTS

RESULT 1
AAZ55548

ID   AAZ55548 standard; cDNA; 402 BP.
XX
AC   AAZ55548;
XX
DT   14-MAR-2000   (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA coding region.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
XX   WO961618-A2.
PN
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999;   99WO-US011942.
XX
PR   29-MAY-1998;   98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58219.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 225; 264pp; English.
XX
CC   Sequences AAZ55546-Z55551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154
CC   ligand), canine IL-5, canine or feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune

CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory fragments (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting.
XX
SQ   Sequence 402 BP; 129 A; 79 C; 93 G; 101 T; 0 U; 0 Other;

Query Match   100.0%; Score 402; DB 3; Length 402;
Best Local Similarity 100.0%; Pred. No. 3.2e-110;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGTCGCCTAGTGTTTCTGCCTTT 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGTCGCCTAGTGTTTCTGCCTTT 60

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGGTCGGCCAGAGACCTTGACACTGCTCTCCACTCAT 120
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTAGAAAATCCCATGAATAGACTGGGTCGGCCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy  121 CGAACTTGGCTGATTAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAAATCAC 180
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 CGAACTTGGCTGATTAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAAATCAC 180

Qy  181 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGGTATAGACACATTGAGAGAACCAAAACTGCCCAC 240
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGGTATAGACACATTGAGAGAACCAAAACTGCCCAC 240

Qy  241 GGGGGAGGCCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 GGGGGAGGCCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300

Qy  301 CAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301 CAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Qy  361 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
        ||||||||||||||||||||||||||||||||||||||||||||
Db  361 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
```

RESULT 2
AA255549/c
ID   AA255549 standard; cDNA; 402 BP.
XX
AC   AA255549;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA coding region complement.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999; 99WO-US011942.
XX
PR   29-MAY-1998; 98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;

DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58219.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 226; 264pp; English.
XX
CC   Sequences AA255546-255551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory fragments (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting.
XX
SQ   Sequence 402 BP; 101 A; 93 C; 79 G; 129 T; 0 U; 0 Other;

Query Match   100.0%; Score 402; DB 3; Length 402;
Best Local Similarity 100.0%; Pred. No. 3.2e-110;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGTCGCCTAGTGTTTCTGCCTTT 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  402 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGTCGCCTAGTGTTTCTGCCTTT 343

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGGTCGGCCAGAGACCTTGACACTGCTCTCCACTCAT 120
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  342 GCTGTAGAAAATCCCATGAATAGACTGGGTCGGCCAGAGACCTTGACACTGCTCTCCACTCAT 283

Qy  121 CGAACTTGGCTGATTAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAAATCAC 180
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  282 CGAACTTGGCTGATTAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAAATCAC 223

Qy  181 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGGTATAGACACATTGAGAGAACCAAAACTGCCCAC 240
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  222 CAACTGTGCATTAAAGAAGAGTTTTTCAGGGGTATAGACACATTGAGAGAACCAAAACTGCCCAC 163

Qy  241 GGGGGAGGCCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  162 GGGGGAGGCCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 103

Qy  301 CAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  102 CAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 43

Qy  361 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
        ||||||||||||||||||||||||||||||||||||||||||||
Db   42 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 1
```

RESULT 3
AA255546
ID   AA255546 standard; cDNA; 610 BP.
XX
AC   AA255546;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;

KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
FH   Key   Location/Qualifiers
FH
FT   CDS   29..433
FT   /*tag= a
FT   /product= "Canine IL-5"
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999;   99WO-US011942.
XX
PR   29-MAY-1998;   98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58219.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 223-224; 264pp; English.
XX
CC   Sequences AAZ55546-255551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine IL-5, canine or feline CD40, canine or
CC   feline interferon-alpha (IFN-alpha) (CD40
CC   ligand), canine IL-5, canine IL-13, feline interferon-alpha
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting.
XX
SQ   Sequence 610 BP; 202 A; 114 C; 139 G; 155 T; 0 U; 0 Other;

Query Match   100.0%;   Score 402; DB 3;   Length 610;
Best Local Similarity   100.0%;   Pred. No. 3.7e-110;
Matches 402;   Conservative 0;   Mismatches 0;   Indels 0;   Gaps 0;

Qy   1 ATGAGAATGCTTCTGAATTTGAGTTTGTTGCTACTCTTGGGGCTGCCATATGTTGTTGTTT   60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   29 ATGAGAATGCTTCTGAATTTGAGTTTGTTGCTACTCTTGGGGCTGCCATATGTTGTTGTTT   88

Qy   61 GCTGTGAAAAATCCCATGAATAGACTGGTTGGTCCAGAGAGCCTTGACACTGCCTCCACTC   120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   89 GCTGTGAAAAATCCCATGAATAGACTGGTTGGTCCAGAGAGCCTTGACACTGCCTCCACTC   148

Qy   121 CGAACTTGGCTGTCGATAGGGCGGATGGGAACCTGATTGATTCCTACTCCTCGAAAATAAA   180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   149 CGAACTTGGCTGTCGATAGGGCGGATGGGAACCTGATTGATTCCTACTCCTCGAAAATAAA   208

Qy   181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAAACCAAACTGCCCAC   240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   209 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAAACCAAACTGCCCAC   268

Qy   241 GGGGAGGAGGCTGTGGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACACATAG   300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   269 GGGGAGGAGGCTGTGGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAAGAACACATAG   328

RESULT 4
AAZ55547/c
ID   AAZ55547 standard; cDNA; 610 BP.
XX
AC   AAZ55547;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA complement.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
FH   Key   Location/Qualifiers
FH
FT   CDS   complement(178..582)
FT   /*tag= a
FT   /product= "Canine IL-5"
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999;   99WO-US011942.
XX
PR   29-MAY-1998;   98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58219.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 224-225; 264pp; English.
XX
CC   Sequences AAZ55546-255551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting.
XX
SQ   Sequence 610 BP; 155 A; 139 C; 114 G; 202 T; 0 U; 0 Other;

Query Match   100.0%;   Score 402; DB 3;   Length 610;
Best Local Similarity   100.0%;   Pred. No. 3.7e-110;

Qy   301 CAAAAAAAAAGGTGTGCAGGGAGGAAGATGTGGAGGAGTGAGTGACAAAAGTTCCTAGACTACCTGCAA   360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   329 CAAAAAAAAAGGTGTGCAGGGAGGAAGATGTGGAGGAGTGAGTGACAAAAGTTCCTAGACTACCTGCAA   388

Qy   361 GTATTTCTTGGTGTAATAAACACCGAGTGACACCGGAAAGT   402
              |||||||||||||||||||||||||||||||||||||||||
Db   389 GTATTTCTTGGTGTAATAAACACCGAGTGACACCGGAAAGT   430

Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy      1 ATGAGAAATGCTTCTGAATTTGAGTTTGTCTAGCTCTTGTTTTCTGCCTTT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    582 ATGAGAAATGCTTCTGAATTTGAGTTTGTCTAGCTCTTGTTTTTCTGCCTTT 523

Qy     61 GCTGTGTAGAAAATCCCATGAATAGACTGGTGGGGCAGAGACTGCTCTCCACTCAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    522 GCTGTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACTGCTCTCCACTCAT 463

Qy    121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAAATAAAATCAC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    462 CGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAAATAAAATCAC 403

Qy    181 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    402 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 343

Qy    241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    342 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 283

Qy    301 CAAAAAAAAAGGTGTGCAGAGAAAGATGAGAGTGCACAAAGTTCCTAGACTACCTGCAA 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    282 CAAAAAAAAAGGTGTGCAGAGAAAGATGAGAGTGCACAAAGTTCCTAGACTACCTGCAA 223

Qy    361 GTATTTCTTGGTGTGTAATAAACACACCGAGTGGACACCCGGAAAGT 181
          |||||||||||||||||||||||||||||||||||||||||||||
Db    222 GTATTTCTTGGTGTGTAATAAACACACCGAGTGGACACCCGGAAAGT 181
```

RESULT 5
AAF74300

ID   AAF74300 standard; DNA; 405 BP.
XX
AC   AAF74300;
XX
DT   04-MAY-2001 (first entry)
XX
DE   Canine interleukin-5 coding sequence #1.
XX
KW   Dog; interleukin-5; IL-5; allergy; cancer; gene therapy;
KW   inflammatory reaction; ds.
XX
OS   Canis sp.
XX
PN   WO20011049-A2.
XX
PD   15-FEB-2001.
XX
PF   09-AUG-2000; 2000WO-US021651.
XX
PR   10-AUG-1999; 99US-00371615.
XX
PA   (IDEX-) IDEXX LAB INC.
XX
PI   Guo H, Lawton R, Mermer B, Aiyappa AP;
XX
DR   WPI; 2001-191542/19.
DR   P-PSDB; AAB72615.
XX
PT   Novel canine interleukin 5 polynucleotide and polypeptides are used for
PT   generating antibodies which are useful in treating allergies in dogs.
XX
PS   Claim 31; Page 46; 48pp; English.
XX
CC   The present invention provides the protein and coding sequences of the
CC   canine interleukin-5 (IL-5) protein. This can be used to treat allergies,
CC   cancer and inflammatory reactions in dogs. The present sequence is one
CC   version of the IL-5 coding sequence shown in the specification
SQ   Sequence 405 BP; 131 A; 77 C; 94 G; 103 T; 0 U; 0 Other;

Query Match 99.2%; Score 398.8; DB 4; Length 405;
Best Local Similarity 99.5%; Pred. No. 2.9e-109;
Matches 400; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

```
Qy      1 ATGAGAAATGCTTCTGAATTTGAGTTTGTCTAGCTCTTGTTTTCTGCCTTT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 ATGAGAAATGCTTCTGAATTTGAGTTTGTCTAGCTCTTGTTTTTCTGCCTTT 60

Qy     61 GCTGTGTAGAAAATCCCATGAATAGACTGGTGGGGCAGAGACTGCTCTCCACTCAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 GCTGTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACTGCTCTCCACTCAT 120

Qy    121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAAATAAAATCAC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAAATAAAATCAC 180

Qy    181 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240

Qy    241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300

Qy    301 CAAAAAAAAAGGTGTGCAGAGAAAGATGAGAGTGCACAAAGTTCCTAGACTACCTGCAA 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 CAAAAAAAAAGGTGTGCAGAGAAAGATGAGAGTGCACAAAGTTCCTAGACTACCTGCAA 360

Qy    361 GTATTTCTTGGTGTGTAATAAACACACCGAGTGGACACCCGGAAAGT 402
          ||||||||||||||||||||||||||||||||||||||||||||||
Db    361 GTATTTCTTGGTGTGTAATAAACACACCGAGTGGACACCCGGAAAGT 402
```

RESULT 6
AAZ55550

ID   AAZ55550 standard; cDNA; 345 BP.
XX
AC   AAZ55550;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine mature interleukin-5 (IL-5) cDNA.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
PN   WO961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999; 99WO-US011942.
XX
PR   29-MAY-1998; 98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58220.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 226-227; 264pp; English.
XX
CC   Sequences AAZ55546-Z55551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
```

## Left column

CC  nucleotides which encode these immunoregulatory proteins. The proteins,
CC  their associated nucleic acids, specific antibodies and inhibitors may be
CC  used as vaccines for therapeutic or prophylactic regulation of an immune
CC  response in animals (particularly cats, dogs, horses and humans). They
CC  may be used to treat autoimmune or infectious diseases including
CC  allergies, tumours, inflammation and graft rejection, and to increase the
CC  response from a co-administered antigen. The nucleotide sequences can
CC  also be used for the recombinant production of a protein, while
CC  nucleotide fragments are useful as probes, as amplification primers and
CC  as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC  The proteins may be used to raise antibodies and to screen for modulators
CC  of activity, while the antibodies may be used in detection, and in drug
CC  targetting
XX
SQ  Sequence 345 BP; 120 A; 68 C; 78 G; 79 T; 0 U; 0 Other;

Query Match         85.8%;  Score 345;  DB 3;  Length 345;
Best Local Similarity   100.0%;
Matches  345;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;
                              Pred. No. 3.8e-93;

Qy       58 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 117
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60

Qy      118 CATCGAACTTGGCTGATAGGCGCAACCTGATGATTCCTACTCCTGAAAATAAAAAT 177
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       61 CATCGAACTTGGCTGATAGGCGCAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120

Qy      178 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACAATTGAAGAACCAAAACTGCC 237
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACAATTGAAGAACCAAAACTGCC 180

Qy      238 CACGGGGGAGGCTGTGGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 297
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      181 CACGGGGGAGGCTGTGGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240

Qy      298 CGCCAAAAAAAAAAGGGTGTGCAGGAGAAAGATGGGAGAGTGACAAAAGTTCCTAGACTACCTG 357
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      241 CGCCAAAAAAAAAAGGGTGTGCAGGAGAAAGATGGGAGAGTGACAAAAGTTCCTAGACTACCTG 300

Qy      358 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
            ||||||||||||||||||||||||||||||||||||||||||||||
Db      301 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345

RESULT 7
ID  AA255551/c
AA255551 standard; cDNA; 345 BP.
XX
AC  AA255551;
XX
DT  14-MAR-2000  (first entry)
XX
DE  Canine mature interleukin-5 (IL-5) cDNA complement.
XX
PR  29-MAY-1998;
PF  28-MAY-1999;  99WO-US011942.
PD  02-DEC-1999.
PN  WO9961618-A2.
XX
OS  Canis familiaris.
XX
KW  Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW  immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
PA  (HESK-) HESKA CORP.
XX
PI  Sim G, Yang S, Dreitz MJ, Wondering RS;
XX
DR  WPI; 2000-072623/06.

## Right column

DR  P-PSDB; AAY58220.
XX
DR  Claim 1h; Page 228; 264pp; English..
XX
PT  Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT  useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS  Claim 1h; Page 228; 264pp; English..
XX
CC  Sequences AA255546-255551 represent cDNA sequences encoding canine
CC  interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC  feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC  ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC  and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC  nucleotides which encode these immunoregulatory proteins. The proteins,
CC  their associated nucleic acids, specific antibodies and inhibitors may be
CC  used as vaccines for therapeutic or prophylactic regulation of an immune
CC  response in animals (particularly cats, dogs, horses and humans). They
CC  may be used to treat autoimmune or infectious diseases including
CC  allergies, tumours, inflammation and graft rejection, and to increase the
CC  response from a co-administered antigen. The nucleotide sequences can
CC  also be used for the recombinant production of a protein, while
CC  nucleotide fragments are useful as probes, as amplification primers and
CC  as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC  The proteins may be used to raise antibodies and to screen for modulators
CC  of activity, while the antibodies may be used in detection, and in drug
CC  targetting
XX
SQ  Sequence 345 BP; 79 A; 78 C; 68 G; 120 T; 0 U; 0 Other;

Query Match         85.8%;  Score 345;  DB 3;  Length 345;
Best Local Similarity   100.0%;
Matches  345;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;
                              Pred. No. 3.8e-93;

Qy       58 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 117
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      345 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 286

Qy      118 CATCGAACTTGGCTGATAGGCGCAACCTGATGATTCCTACTCCTGAAAATAAAAAT 177
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      285 CATCGAACTTGGCTGATAGGCGCAACCTGATGATTCCTACTCCTGAAAATAAAAAT 226

Qy      178 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACAATTGAAGAACCAAAACTGCC 237
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      225 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACAATTGAAGAACCAAAACTGCC 166

Qy      238 CACGGGGGAGGCTGTGGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 297
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      165 CACGGGGGAGGCTGTGGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 106

Qy      298 CGCCAAAAAAAAAAGGGTGTGCAGGAGAAAGATGGGAGAGTGACAAAAGTTCCTAGACTACCTG 357
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      105 CGCCAAAAAAAAAAGGGTGTGCAGGAGAAAGATGGGAGAGTGACAAAAGTTCCTAGACTACCTG 46

Qy      358 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
            ||||||||||||||||||||||||||||||||||||||||||||||
Db       45 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAGT 1

RESULT 8
ID  AA244265
AA244265 standard; DNA; 838 BP.
XX
AC  AA244265;
XX
DT  31-MAR-2000  (first entry)
XX
DE  Porcine IL-5 DNA.
XX
KW  Pig; vaccine; cysticercosis; protective antigen; cC1; cC3; cC4;
KW  tenial cysticercus; gamma interferon; IFN-gamma; interleukin 5; IL-5; ss.
XX
OS  Sus scrofa.
XX
PN  CN1231339-A.

**Left column**

```
XX
PD   13-OCT-1999.
XX
PF   29-JAN-1999;  99CN-00113447.
XX
PR   29-JAN-1999;  99CN-00113447.
XX
PA   (UYTW-) UNIV NO 2 MILITARY MEDICAL PLA.
XX
PI   Sun S,  Dai J;
XX
DR   WPI; 2000-087904/08.
XX
PT   Nucleic acid vaccine for cysticercosis co-contracted by human and pig.
XX
PS   Claim 3; Page 9; 21pp; Chinese.
XX
CC   This invention describes a novel nucleic acid vaccine for preventing and
CC   curing human and pork cysticercosis. The invention involves the formation
CC   of a eukaryotic expression plasmid from fusion transcript expression unit
CC   consisting of three protective antigen genes (cC1, cC3 and cC4) of pig
CC   tenial cysticercus and coexpression unit of related cell factor gamma
CC   interferon (IFN-gamma) and pork interleukin 5 (IL-5)] genes. The
CC   production and purification process of said nucleic acid vaccine is
CC   simple and convenient, the physical and chemical properties of the
CC   vaccine are stable, and the vaccine is easy to store and transport, and
CC   possesses effective immunological protective function for human and pig
CC   cysticercosis.This sequence represents the pig IL-5 gene used in the
CC   method of the invention

SQ   Sequence 838 BP; 280 A; 148 C; 171 G; 239 T; 0 U; 0 Other;

Query Match              85.7%;  Score 344.4;  DB 3;  Length 838;
Best Local Similarity    91.0%;
Matches  366;  Conservative   0;  Mismatches  36;  Indels   0;  Gaps   0;
             Pred. No. 8.1e-93;
```

```
Qy        1 ATGAGAATGCTTCTGAATTTGAGTTTGCTACGTCTTCTGGGGGCTGCCTATGTTCTGCCTTT   60
            ||||||||||||||| |||||||||| ||||| |||||||||||||||||||||||||| ||
Db       45 ATGAGAATGCTTCTCGATTTGAGTTTGTTGCTAGCTCTTCTGGGGGCTGCCTATGTTCTGCCATT  104

Qy       61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCGAGAGACCTGACACTGCTCTTCCACTCAT  120
            |||||| ||| ||||||||||||| ||||||| |||||||||| ||||||| ||||||||||
Db      105 GCTGTACAAAGTCCCATGAATAGGCTGGTGGGCAGAGACCTTGACACTGCTTCTCCACTCAT  164

Qy      121 CGAACTTGGCTGTGATAGGCGATGGGAACCTCATGATTCCTTCACTCCTGAAAATAAAATCAC  180
            ||||||    |||||||||||||| |||||||| |||||||||| ||||||||| |||| |||||
Db      165 CGAACTCTACTGATAGGCGACGGGAACCTGATGATTCCTTCCTCACTCCTGAACATAACAATCAC  224

Qy      181 CAACTGTGCATTAAAGAAGTTTTCAGGGGTATAGACACATTGAAGAACACCAAACTGCCCAC  240
            |||||||  | |||| ||||| |||||| |||||||||||||| ||||| ||  ||||| ||
Db      225 CAACTGTCATTGAGAGAAGTCTTTCAGGGTATAGACACATTAAAGAAATCGCACTGTGCCG  284

Qy      241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTGTCTTTAATAAAAGAACACATAGAGCGC  300
            ||||| ||||||||| |||| |||||||||||||| ||||||||||||||||||||||| ||||
Db      285 GGGGATGCTGTGGAAAAGCTTTTCCGAAACTTGTCTTTAATAAAAGAACACATAGACCGC  344

Qy      301 CAAAAAAAAGGTGTGCAGGAGAGGAGAGGATGAGAGAGTGACAAAGTTTCCTAGACTACCTGCAA  360
            |||||||| ||||||| || |||| || ||||| |||||||||||||||||||||||||||||
Db      345 CAAAAAAAAAGTGTGGAGGAAGATGGGAGAAAGTTTCCTAGACTACCTGCAA  404

Qy      361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT  402
            || ||||||||||||||||||| ||||||||||  |||||||
Db      405 GTGTTTCTTGGTGTAATAAACACTGAGTGGACAATGGAAAGT  446
```

Right column

```
XX
DE   Ovine IL-5 gene.
XX
KW   Cytokine; ovine; sheep; interleukin-5; interleukin-12; IL-5; IL-12;
KW   livestock; cow; stress; transport; vaccine adjuvant; veterinary; cancer;
KW   immunosuppression; allergy; reproductive system; growth; early maturity;
KW   antibody; diagnosis; immunopotentiator;
KW   early haematopoietic progenitor cell; cytotoxic cell; thymocyte;
KW   secretion; IgM; IgA; bacterial endotoxin; gamma-interferon; ss.
XX
OS   Ovis aries.
XX
FH   Key            Location/Qualifiers
FT   CDS            46..444
FT                  /*tag= a
FT                  /product= "Ovine_IL-5"
FT   exon           46..183
FT                  /*tag= b
FT                  /number= 1
FT   exon           184..216
FT                  /*tag= c
FT                  /number= 2
FT   exon           217..345
FT                  /*tag= d
FT                  /number= 3
FT   exon           346..480
FT                  /*tag= e
FT                  /number= 4
XX
PN   WO9700321-A1.
XX
PD   03-JAN-1997.
XX
PI   Seow H,  Wood P;
XX
PA   (CSIR ) COMMONWEALTH SCI & IND RES ORG.
XX
DR   WPI; 1997-077528/07.
DR   P-PSDB; AAW08479.
XX
PR   14-JUN-1995;  95AU-00003502.
PR   27-OCT-1995;  95AU-00006244.
XX
PT   Nucleic acid encoding ovine interleukin-5 or -12 - used as vaccine
PT   adjuvants and to treat or prevent microbial infections in livestock.
XX
PS   Claim 6; Page 39-40; 78pp; English.
XX
CC   The sequences given in AAT50755-56 encode ovine interleukin-5 (IL-5).
CC   Ovine IL-5 or IL-12 are used to treat and/or prevent infections in
CC   livestock (esp. cows and sheep), particularly where the animals are
CC   stressed, e.g. during transport. IL-5 and IL-12 can also be used as
CC   adjuvants in vaccines for veterinary use (partic. weakly immunogenic
CC   subunit or synthetic peptide vaccines). They may also be used to treat
CC   cancer, immunosuppression and allergy, to enhance/suppress the
CC   reproductive system and to promote growth or early maturity. Optionally
CC   interleukin can be delivered from constructs or delivery cells and
CC   antibodies are useful in enzyme immunoassays for rapid diagnosis of
CC   infection. The interleukins are immunopotentiators, especially IL-5
CC   promotes growth of early haematopoietic progenitor cells and generation
CC   of cytotoxic cells from thymocytes, also it stimulates production and
CC   secretion of IgM and IgA (in synergism with bacterial endotoxin). IL-12
CC   induces production of gamma-interferon by, and proliferation of, T and NK
CC   cells and increases the (non-)specific cytolytic lymphocyte response. The
CC   genetic constructs can also be used for in vitro production of IL-5 or -
CC   12. (Updated on 17-OCT-2003 to standardise OS field)
XX
SQ   Sequence 520 BP; 166 A; 99 C; 124 G; 131 T; 0 U; 0 Other;

Query Match              78.7%;  Score 316.2;  DB 2;  Length 520;
Best Local Similarity    86.8%;  Pred. No. 1.9e-84;
```

Matches 348; Conservative   0; Mismatches   53; Indels   0; Gaps   0;

```
Qy          1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCGTTATAGTTGTTCGCCTTT 60
Db         40 AAGAGAATGCATCCTGGCTTTGACCTTGGTAGCTCTTGGAGCTCCTATGTTTGTGCCAAT 99

Qy         61 GCTGTAGAAAATCCCATGAAATAGAGACTGGTGGCAGAGACCTTGACACTGCTTCCACTCAT 120
Db        100 GCTGTGAGAAGTACCATGAAATAGACTGGTGGCCAGAGACCTTGACACTGCTTCCACGCAT 159

Qy        121 CGAACTTGGCTGATAGGCGATGGGAACCTGACTTGCTTGAAAAATAAAAATCAC 180
Db        160 CAAACTTCTGCTGATAGGTGATGGGAACTTGAGCACTTCCTCAGCATACAAAATCAC 219

Qy        181 CAACTGTGCATTAAAGAGAGTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
Db        220 CAACTATGCAATTGAAGAAGTCTTTCAGGGAATAGACACATTGAAGAATCAAAACTGCACA 279

Qy        241 GGGGAGGCCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
Db        280 GGGGGATGCTGTGAAAAAATATTCCGAAACTTGTCTTTAATAAAAGAATACATAGACCTC 339

Qy        301 CAAAAAAAAGGTGTCCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
Db        340 CAAAAAAGAAGTGTGAGGAGAAAGATGGAGAGTGAAAACAATTCCTCGACTACCTGCAA 399

Qy        361 GTATTTTCTTGGGTGTGAATAAACACCGAGTGGACACCGGAAAG 401
Db        400 GTTTTCCTTGGGTGTGATAAACACAGAGTGGACGATGGAAAG 440
```

Query Match   77.6%; Score 311.8; DB 2; Length 399;
Best Local Similarity   86.8%; Pred. No. 3.7e-83;
Matches 343; Conservative   0; Mismatches   52; Indels   0; Gaps   0;

```
Qy          7 ATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTTATGTTTGTTCGCCTTTGCTGTA 66
Db          1 ATGCATCCTGCGTTTGACCTTGGTAGCTCTTGGAGCTGCCTATGTTTGTGCCAATGCTGTA 60

Qy         67 GAAAATCCCATGAAATAGACTGGTGGCAGAGACCTTGACACTGCTTCCACTCATCGAACT 126
Db          1 ATGCATCCTGCGTTTGACCTTGGTAGCTCTTGGAGCTGCCTATGTTTGTGCCAATGCTGTA 60

Qy         61 GAAAGTACCATGAAATAGACTGGTGGCCAGAGACCTTGACACTGCTTCCACGCATCAAACT 120

Qy        127 TGGCTGATAGGCGATGGGAACCTGACTGATGATTCCTACTCCTGAAATAAAAATCACCAACTG 186
Db        121 CTGCTGATAGGTGATGGGAACTTGAGCACTTCCTCAGCATACAAAATCACCAACTA 180

Qy        187 TGCCATTAAAGAGAGTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCACGCGGGGAG 246
Db        181 TGCAATTGAAGAAGTCTTTCAGGGAATAGACACATTGAAGAATCAACAAGGGGAT 240

Qy        247 GCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGCCAAAAA 306
Db        241 GCTGTGAAAAAATATTCCGAAACTTGTCTTTAATAAAAGAATACATAGACCTCCAAAAA 300

Qy        307 AAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAAGTATTT 366
Db        301 AGGAAGTGTGGAGGAGAAAGATGGAGAGTGAAAACAATTCCTCGACTACCTGCAAGTTTTC 360

Qy        367 CTTGGGTGTGAATAAACACCGAGTGGACACCGGAAAG 401
Db        361 CTTGGGTGTGATAAACACAGAGTGGACGATGGAAAG 395
```

RESULT 12
AAA34857
ID   AAA34857 standard; DNA; 816 BP.
XX
AC   AAA34857;
XX
DT   28-JUL-2000 (first entry)
XX
DE   Human adenosine receptor related polynucleotide SEQ ID NO:2546.
XX
KW   Human; adenosine receptor; low adenosine antisense oligonucleotide;
KW   phosphorothioate; impaired respiration; inflammation; allergy;
KW   allergic disease; bronchoconstriction; inhibitor; antiinflammatory;
KW   antiallergic; antiasthmatic; cytostatic; analgesic; impaired airway;
KW   lung disease; ischaemic condition; pulmonary vasoconstriction; asthma;
KW   respiratory distress syndrome; pain; cystic fibrosis; emphysema;
KW   pulmonary hypertension; chronic obstructive pulmonary disease; COPD;
KW   cancer; leukaemia; lymphoma; carcinoma; metastasis; ss.
XX
OS   Homo sapiens.
XX
PN   WO200009525-A2.
XX
PD   24-FEB-2000.
XX
PF   03-AUG-1999; 99WO-US017712.
XX
PR   10-AUG-1999; 99US-0037l615.
XX
PA   (IDEX-) IDEXX LAB INC.
XX
PI   Guo H, Lawton R, Mermer B, Aiyappa AP;
XX
DR   WPI; 2001-191542/19.
XX
PT   Novel canine interleukin 5 polynucleotide and polypeptides are used for
PT   generating antibodies which are useful in treating allergies in dogs.
XX
PS   Claim 1; Page 35; 48pp; English.
XX
CC   The present invention provides the protein and coding sequences of the
CC   canine interleukin-5 (IL-5) protein. This can be used to treat allergies,
CC   cancer and inflammatory reactions in dogs. The present sequence is one
CC   version of the IL-5 coding sequence shown in the specification
XX
SQ   Sequence 393 BP; 128 A; 82 C; 86 G; 97 T; 0 U; 0 Other;

Query Match   71.5%; Score 287.4; DB 4; Length 393;
Best Local Similarity 99.7%;
Matches 288; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

```
Qy  103 ACACTGCTCTCCACTCATCGAACTTGGCTGATAGGGCGGCCGGAACCTGATCGATTCCTACT 162
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 ACACTGCTCTCCACTCATCGAACTTGGCTGATAGGGCGGCCGGAACCTGATCGATTCCTACT 60

Qy  163 CCTGAAAATATAAAAATCACCAACTGTCCATTAAAGAAGTTTTTCAGGGTATAGACACATTG 222
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CCTGAAAATATAAAAATCACCAACTGTCCATTAAAGAAGTTTTTCAGGGTATAGACACATTG 120

Qy  223 AAGAACCAAACTGCCCACGGGGGAGGCGTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATA 282
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 AAGAACCAAACTGCCCACGGGGGAGGCGTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATA 180

Qy  283 AAAGAACACATAGAGGCGCCCAAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAG 342
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 AAAGAACACATAGAGGCGCCCAAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAG 240

Qy  343 TTCCTAGACTACCTGCAAGATATTTCTTGGTGTAATAAAACACCGAGTGGA 391
         |||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 TTCCTAGACTACCTGCAAGATATTTCTTGGTGTAATAAAACACCGAGTGGA 289
```

PR   03-AUG-1998; 98US-0095212P.
XX
PA   (UYEC-) UNIV EAST CAROLINA.
XX
PI   Nyce JW;
XX
DR   WPI; 2000-205971/18.
XX
PT   New antisense oligonucleotides useful for treating e.g. pulmonary
PT   vasoconstriction, inflammation, allergies, asthma, hypertension,
PT   bronchitis, emphysema, respiratory distress syndrome, ischemia or
PT   cancers.
XX
Disclosure; Page 716; 1343pp; English.

CC   The present invention describes a new composition comprising an antisense
CC   oligonucleotide (ON) with low adenosine (up to 15%), which targets
CC   nucleic acids involved in bronchoconstriction, allergies, and/or
CC   inflammation. The ON can have antiinflammatory, antiallergic,
CC   antiasthmatic, cytostatic and analgesic activities. The compositions are
CC   useful for the treatment of diseases associated with inflammation,
CC   impaired airways, including lung disease and diseases whose secondary
CC   effects afflict the lungs of a subject. They can be used for treating
CC   e.g. ischaemic conditions, pulmonary vasoconstriction, allergies, asthma,
CC   fibrosis, pulmonary hypertension, emphysema, chronic obstructive
CC   pulmonary disease (COPD), and cancers such as leukaemias, lymphomas,
CC   carcinomas, and cancers which may metastasise to the lungs, including
CC   breast and prostate cancer. The reduction of the adenosine content of the
CC   ONs reduces side effects. The A-containing ONs break down with the
CC   release of deoxyadenosine which activates adenosine receptors causing
CC   bronchoconstriction and inflammation. AAA32313 to AAA35512 represent the
CC   nucleotide sequences given in the sequence listing from the present
CC   invention, which correspond to SEQ ID NO:1 to 2815, and then the last 185
CC   sequences are also called SEQ ID NO:1 to 185, but the sequences differ
CC   from the previously named sequences. SEQ ID NO:11 to 1680 (AAA32323 to
CC   AAA33992) are specifically claimed ONs from the present invention. N.B.
CC   Sequences given in the disclosure of the present invention do not match
CC   up with their corresponding SEQ ID NO: sequences given in the sequence
CC   listing
XX
SQ   Sequence 816 BP; 277 A; 137 C; 164 G; 238 T; 0 U; 0 Other;

Query Match   69.0%; Score 277.2; DB 3; Length 816;
Best Local Similarity 80.6%;
Matches 324; Conservative 0; Mismatches 78; Indels 0; Gaps 0;

```
Qy    1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTTAGCTCTTGGGGCTTGCCCTATGTTTCTGCTTTT 60
         ||||| ||||||||||| |||||||||||| ||||||||||| ||| ||||||| || ||| |||
Db   45 ATGAGGAATGCTTCTGCATTTGAGTTTGCCTAGCTCTTGGAGCTGCCCTACGTGTATGCCATC 104

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCCTTGGCAGCACTGCTTCTCCACTCAT 120
         ||| || ||||||||||   |  |||||||  |||| |||||||||  |||||||||||||||||
Db  105 CCCACAGAAAATCCCACAAGTGCATTGGATGTGCAATGAGAAGAGACCCTGGCACTGCTTCTCCAT 164

Qy  121 CGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180
         |||||| | ||| |||| |  ||| ||| ||| ||||||| ||||| ||||||  ||||||
Db  165 CGAACTCGCTGCATTGAATGAGTGTTCCTGAGGATTCCGTTCCTTGGCTATAAAAATCAC 224

Qy  181 CAACTGTCCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCCCAC 240
         |||||||| |  |||||| ||| |||||| ||||  |||| || |  ||   ||| ||||
Db  225 CAACTGTGCACTGAAGAAATCTTTCAGGGAATAAGGCAACACTGTCAAACTGTCCAA 284

Qy  241 GGGGAGGCGTGTGGATAAAACTATTCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
         |||| || ||||| | ||  ||||||||||||||||| ||||||||||||  || || ||||
Db  285 GGGGTACTGTGGAAAGACTATTCAAAAACTTGTCCTTAATAAAAGAAAATACATTGACGGC 344

Qy  301 CAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
         |||||||||| |||| ||||| || ||| |||||||| ||  ||||||||||||||||||
Db  345 CAAAAAAAAAAGTGTGGAGGAAGAAAGACGGGAGAGTGAAACCAATTCCTAGACTACCTGCAA 404

Qy  361 GTATTTCTTGGTGTAATAAAACACCGAGTGGACACCCGAAAGT 402
         ||||||||||||||||||| |||||||||||||  |||||||
Db  361 ...
```

Db   405 GAGTTTCTTGGTGTAATGAACACCGAGTGGATAATAGAAAGT 446

RESULT 13

ID   AAA13338
AAA13338   standard; cDNA; 816 BP.
XX
AC   AAA13338;
XX
DT   25-JUL-2000 (first entry)
XX
DE   Human interleukin-5 (IL-5) nucleotide sequence.
XX
KW   Human; interleukin-5; IL-5; inflammatory disease; asthma; eczema;
KW   antisense oligonucleotide; allergic rhinitis; inflammatory skin disease;
KW   allergic conjunctivitis; inhibitor; ss.
XX
OS   Homo sapiens.
XX
PN   US6048726-A.
XX
PD   11-APR-2000.
XX
PF   15-MAY-1998; 98US-0079839.
PR   15-MAY-1998; 98US-0079839.
XX
PA   (WELT/) WELTMAN J K.
PA   (KARI/) KARIM A S.
XX
PI   Weltman JK, Karim AS;
XX
DR   WPI; 2000-302784/26.
XX
PT   Oligonucleotide comprising non-natural internucleoside linkage, useful
PT   for inhibiting interleukin-5 expression and treating inflammatory
PT   diseases, asthma, allergic rhinitis, allergic conjunctivitis.
XX
PS   Disclosure; Col 3-4; 11pp; English.
XX
CC   This sequence represents the human interleukin-5 (IL-5) encoding
CC   nucleotide sequence. Interleukin-5 is involved in eosinophilic
CC   inflammation and inflammatory disorders. The present invention relates to
CC   an IL-5 antisense oligonucleotide (see AAA13337) which inhibits the
CC   expression of IL-5. The antisense oligonucleotide has at least one non-
CC   natural internucleoside linkage. The oligonucleotide is able to inhibit
CC   IL-5 secretion in a dose dependent manner, and is useful for inhibiting
CC   IL-5 expression and therefore treating inflammatory diseases, asthma,
CC   allergic rhinitis, allergic conjunctivitis and inflammatory skin diseases
CC   such as eczema
XX
SQ   Sequence 816 BP; 277 A; 137 C; 164 G; 238 T; 0 U; 0 Other;

Query Match   69.0%; Score 277.2; DB 3; Length 816;
Best Local Similarity 80.6%; Pred. No. 1.2e-72;
Matches 324; Conservative 0; Mismatches 78; Indels 0; Gaps 0;

Qy   1 ATGAGAAATGCTTCTGAATTTGAGTTTTGCTAGCTCTTGGGGTCGCCTATTGTTTCTGGCTTT 60
        |||||||||| ||||||||||||||||||||||||||||| |||||| |||||
Db   45 ATGAGGATGCTTCTGCATTTGCATTTGCTAGCTCTTGGAGCTGCCTACGTGTATGCCATC 104

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
        ||||||| |||||||||||||||||||||||||||||||||||| || ||||||||||
Db 105 CCCACAGAAATTCCCACAGTGCATTGGTGAAAGAGACCTTGGCACTGCTTTCTACTCAT 164

Qy 121 CGAACTTGGCTGATTAGGCGATTGGGGGGAACCTGATGATTCCTACTCTCCTGAAAATAAAAATCAC 180
       ||||| ||||| |||| || |||||| | || || |||||||||||
Db 165 CGAACTCTGCTGTGATACCAATGAGACTCTGAGGATTCCTGTTCCTGTTACTATAAAAATCAC 224

Qy 181 CAACTGTGTGCATTAAAGAAGAAGTTTTTCAGGGTATAGAGACACATTGAAGAACCAAAACTGCCCAC 240
       |||||||| ||| ||| ||||||| ||| | |||||||||||||
Db 225 CAACTGTGCACTGAGAAAATCTTTCAGGGAATAGGGCACACTGGAGAGTCAAACTGTGCAA 284

Qy 241 GGGGAGGCGTGGGATAAAACTATTCCAAAAACTTGTGTCTTAATAAAAGAGGACACATAGAGCGGC 300
       |||| ||||||| ||||| |||||||||| | |||| |||||||||||||||||| ||
Db 285 GGGGGTACTGTGGGAAAGACTATTCAAAAACTTATTTCCTTAATAAAAGAAGATTACATTGACGGC 344

Qy 301 CAAAAAAAAGGTGTTGCCAGGAGATGGAGTGAGTGACAAAGATGATTGACAAAGTTCCTAGACTACCTGCAA 360
       ||||||||| |||||||| |||| |||||||| ||||| |||| ||||| ||||||||||||||
Db 345 CAAAAAAAAGTGTGTGGAGAGAAGACGGGAGTAAACAAATTCCTAGACTTTGGGGGCAA 404

Qy 361 GTATTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
       |||||||||||||| |||||||||||||| |||||||
Db 405 GAGTTTCTTGGTGTAATGAACACCGAGTGGATAATAGAAAGT 446

RESULT 14

ID   AAF20979
AAF20979   standard; DNA; 816 BP.
XX
AC   AAF20979;
XX
DT   14-MAR-2001 (first entry)
XX
DE   Human low adenosine antisense oligonucleotide related sequence #2546.
XX
KW   low adenosine antisense oligonucleotide; phosphorothioate; allergy;
KW   human; airway disorder; bronchoconstriction; lung inflammation;
KW   surfactant depletion; respiratory; bronchodilator; antiinflammatory;
KW   immunosuppressive; antiasthmatic; analgesic; hypotensive; cytostatic;
KW   respiratory obstruction; pulmonary obstruction; impeded respiration;
KW   surfactant hypoproduction; pulmonary vasoconstriction; asthma; RDS;
KW   respiratory distress syndrome; pain; cystic fibrosis; allergic rhinitis;
KW   pulmonary hypertension; emphysema; pulmonary transplantation rejection;
KW   chronic obstructive pulmonary disease; pulmonary infection; bronchitis;
KW   cancer; ss.
XX
OS   Homo sapiens.
XX
PN   WO200062736-A2.
XX
PD   26-OCT-2000.
XX
PF   24-MAR-2000; 2000WO-US008020.
XX
PR   06-APR-1999; 99US-0127958P.
XX
PA   (UYEC-) UNIV EAST CAROLINA.
PA   (NYCE/) NYCE J W.
XX
PI   Nyce JW;
XX
DR   WPI; 2000-679539/66.
XX
PT   Low adenosine antisense oligonucleotides which do not trigger
PT   adenosine receptors during metabolism, useful e.g. for treating cancers
PT   and respiratory obstructions.
XX
PS   Disclosure; Page 788; 1592pp; English.
XX
CC   The present invention describes low adenosine (A) content antisense
CC   oligonucleotides and compositions (I) comprising them. In the antisense
CC   oligonucleotides the A is replaced by a 'Universal' or alternative base.
CC   (I) can have respiratory, bronchodilator, antiinflammatory, analgesic,
CC   immunosuppressive, antiasthmatic, hypotensive and cytostatic activities.
CC   The antisense oligonucleotides and (I) can be used to down-regulate the
CC   expression and/or activity of target polypeptides associated with
CC   lung/respiratory disorders and malignancies, such as stimulating and
CC   activating peptide factors and transmitters, transcription factors,
CC   immunoglobulins and antibodies, antibody receptors, cytokines and
CC   chemokines, endogenously produced specific and non-specific enzymes,
CC   binding protein, adhesion molecules and their receptors, cytokine and
CC   chemokine receptors, adenosine receptors, bradykinin receptors, central
CC   nervous system (CNS) and peripheral nervous and non-nervous system
CC   receptors, CNS and peripheral nervous and non-nervous system peptide
CC   transmitters, defensins, growth factors, vasoactive peptides and

CC receptors, binding proteins and malignancy associated proteins. The
CC antisense oligonucleotides may be used in this way to treat disorders
CC including respiratory obstruction (especially pulmonary obstruction
CC and/or bronchoconstriction) and/or lung inflammation, allergy(ies) and/or
CC surfactant hypoproduction which are associated with a disease or
CC condition selected from pulmonary vasoconstriction, inflammation,
CC allergies, impeded respiration, respiratory distress syndrome
CC (RDS), pain, cystic fibrosis (CF), allergic rhinitis (AR), pulmonary
CC hypertension, emphysema, chronic obstructive pulmonary disease (COPD),
CC pulmonary transplantation rejection, pulmonary infections, bronchitis,
CC and/or cancer. AAF18434 to AAF21543 represent human polynucleotide
CC fragments and antisense oligonucleotides used in the exemplification of
CC the present invention
XX
SQ Sequence 816 BP; 277 A; 137 C; 164 G; 238 T; 0 U; 0 Other;
XX

Query Match   69.0%;   Score 277.2;   DB 3;   Length 816;
Best Local Similarity   80.6%;   Pred. No. 1.2e-72;
Matches 324;   Conservative   0;   Mismatches 78;   Indels   0;   Gaps   0;

Qy   1 ATGAGAAATCCTTCTGAATTTGAGTTTTGCTTAGGGTCTTGGGCGGCTGCCTATGTTTCTGCCTTT 60
Db   45 ATGAGGAATGCTTCTGCCATTTGAGTTTGCTAGCTCTTGGACGTCGCTACGGTGTATGCCATC 104

Qy   61 GCTGTAGAAAAATCCCATGAATAGACTGGGTGGGCACGAGAACCTTGACACTGCTCTCCACTCAT 120
Db   105 CCCACAGAAAATTCCCACAAGTGCATTGGTGTAAAAGAGACCTTGGCACTGCTTCTTCTACTCAT 164

Qy   121 CGAACTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180
Db   165 CGAACTCTGCTGATAGGCCAATGAGACTTCCTGTTCCTGTACATAAAAATCAC 224

Qy   181 CAACTGTGCATTAAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCGTGTGCCCAC 240
Db   225 CAACTGTGCACTGAAGAAAATCTTTCAGGGAATAGGCACACTGGAGAGTCAAACTGTGCAA 284

Qy   241 GGGGGAGGCGCTGGATAAACTATTCCAAAACTGTCTTTAATAAAGAAAGAACACATAGAGCGC 300
Db   285 GGGGGTACTGTGGAAAAGACTATTCAAAAACTTGTCCTTAATAAAGAAATACATTGACGGC 344

Qy   301 CAAAAAAAAAGGTGTGCAGGAGGAAGATGGAGAAGTTCCTAGACTACCTGCAA 360
Db   345 CAAAAAAAAAAGTGTGGAGAAGAGACGGAGAAGACGGAGAGTAAACCAATTCCTAGACTACCTGCAA 404

Qy   361 GTATTTCTTGGGTGTAATAAAACACCGGACACCGGAAAGT 402
Db   405 GAGTTTCTTGGTGTAATGAACACCCGAGTGGATAATAGAAGT 446

RESULT 15
ID ADG33104   standard; DNA; 816 BP.
XX
AC ADG33104;
XX
DT 26-FEB-2004   (first entry)
XX
DE Human DNA differentially expressed in patients with SLE SeqID428.
XX
KW human; ds; autoimmune; chronic inflammatory disease; SLE;
KW systemic lupus erythematosis; rheumatoid arthritis; cholecystitis;
KW Sjogren's disease; CREST syndrome; scleroderma; ankylosing spondylitis;
KW ulcerative colitis; primary sclerosing cholangitis; appendicitis;
KW diverticulitis; primary biliary sclerosis.
XX
OS Homo sapiens.
XX
PN WO200305069 4-A2.
XX
PD 06-NOV-2003.
XX
PF 24-APR-2003; 2003WO-US013015.
XX
PR 24-APR-2002; 2002US-00131827.
XX
PA (EXPR-) EXPRESSION DIAGNOSTICS INC.
XX
PI Wohlgemuth J, Fry K, Woodward R, Ly N;
XX
DR WPI; 2003-877243/81.
XX
PS Claim 18; SEQ ID NO 428; 877pp; English.
XX
CC This invention relates to novel methods for diagnosing and monitoring
CC autoimmune and chronic inflammatory diseases. Specifically, it refers to
CC the identification of genes that have a clinical utility as diagnostic
CC tools for the management of, in particular, patients with systemic lupus
CC erythematosis (SLE) or rheumatoid arthritis (RA). Accordingly, the
CC present invention describes a method for determining the levels of
CC multiple differentially expressed genes of a patient, in a concerted
CC manner, in order to achieve an improved diagnostic assay with sensitivity
CC and specificity for the disease in question. As such, these genes are
CC useful for the diagnosis of various other inflammatory disorders
CC including cholecystitis, Sjogren's disease, CREST syndrome, scleroderma,
CC ankylosing spondylitis, ulcerative colitis, primary sclerosing
CC cholangitis, appendicitis, diverticulitis, and primary biliary sclerosis.
CC This polynucleotide is a DNA sequence representing human mRNA that is
CC differentially expressed in patients with SLE, used in an exemplification
CC of the invention.
XX
SQ Sequence 816 BP; 276 A; 137 C; 165 G; 238 T; 0 U; 0 Other;
XX

Query Match   69.0%;   Score 277.2;   DB 10;   Length 816;
Best Local Similarity   80.6%;   Pred. No. 1.2e-72;
Matches 324;   Conservative   0;   Mismatches 78;   Indels   0;   Gaps   0;

Qy   1 ATGAGAAATCCTTCTGAATTTGAGTTTTGCTTAGGGTCTTGGGCGGCTGCCTATGTTTCTGCCTTT 60
Db   45 ATGAGGAATGCTTCTGCCATTTGAGTTTGCTAGCTCTTGGACGTCGCTACGGTGTATGCCATC 104

Qy   61 GCTGTAGAAAAATCCCATGAATAGACTGGGTGGGCACGAGAACCTTGACACTGCTCTCCACTCAT 120
Db   105 CCCACAGAAAATTCCCACAAGTGCATTGGTGTAAAAGAGACCTTGGCACTGCTTCTTCTACTCAT 164

Qy   121 CGAACTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180
Db   165 CGAACTCTGCTGATAGGCCAATGAGACTTCCTGTTCCTGTACATAAAAATCAC 224

Qy   181 CAACTGTGCATTAAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCGTGTGCCCAC 240
Db   225 CAACTGTGCACTGAAGAAAATCTTTCAGGGAATAGGCACACTGGAGAGTCAAACTGTGCAA 284

Qy   241 GGGGGAGGCGCTGGATAAACTATTCCAAAACTGTCTTTAATAAAGAAAGAACACATAGAGCGC 300
Db   285 GGGGGTACTGTGGAAAAGACTATTCAAAAACTTGTCCTTAATAAAGAAATACATTGACGGC 344

Qy   301 CAAAAAAAAAGGTGTGCAGGAGGAAGATGGAGAAGTTCCTAGACTACCTGCAA 360
Db   345 CAAAAAAAAAAGTGTGGAGAAGAGACGGAGAAGACGGAGAGTAAACCAATTCCTAGACTACCTGCAA 404

Qy   361 GTATTTCTTGGGTGTAATAAAACACCGGACACCGGAAAGT 402
Db   405 GAGTTTCTTGGTGTAATGAACACCCGAGTGGATAATAGAAGT 446

Search completed: August 8, 2005, 09:19:50
Job time : 270.467 secs

OM nucleic - nucleic search, using sw model

GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

Run on: August 7, 2005, 09:34:25 ; Search time 333.467 Seconds
                                           (without alignments)
                 7814.559 Million cell updates/sec

Title: US-10-787-382-7
Perfect score: 402
Sequence: 1 atgagaatgcttctgaatt..................ccgagtggaccacggaaagt 402

Scoring table: IDENTITY NUC
                 Gapop 10.0 , Gapext 1.0
Searched: 7297361 seqs, 324162794 residues

Total number of hits satisfying chosen parameters: 14594722

Post-processing: Minimum Match 0%
                 Maximum Match 100%
Minimum DB seq length: 0
Maximum DB seq length: 200000000

Database :   Published Applications NA.*
                 Listing first 45 summaries

	/cgn2_6/ptodata/2/pubpna/US07_PUBCOMB.seq:*
1:	/cgn2_6/ptodata/2/pubpna/PCT_NEW_PUB.seq:*
2:	/cgn2_6/ptodata/2/pubpna/US06_NEW_PUB.seq:*
3:	/cgn2_6/ptodata/2/pubpna/US06_PUBCOMB.seq:*
4:	/cgn2_6/ptodata/2/pubpna/US07_NEW_PUB.seq:*
5:	/cgn2_6/ptodata/2/pubpna/PCTUS_PUBCOMB.seq:*
6:	/cgn2_6/ptodata/2/pubpna/US08_NEW_PUB.seq:*
7:	/cgn2_6/ptodata/2/pubpna/US09A_PUBCOMB.seq:*
8:	/cgn2_6/ptodata/2/pubpna/US09B_PUBCOMB.seq:*
9:	/cgn2_6/ptodata/2/pubpna/US09C_PUBCOMB.seq:*
10:	/cgn2_6/ptodata/2/pubpna/US09_NEW_PUB.seq:*
11:	/cgn2_6/ptodata/2/pubpna/US10A_PUBCOMB.seq:*
12:	/cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
13:	/cgn2_6/ptodata/2/pubpna/US10C_PUBCOMB.seq:*
14:	/cgn2_6/ptodata/2/pubpna/US10D_PUBCOMB.seq:*
15:	/cgn2_6/ptodata/2/pubpna/US10E_PUBCOMB.seq:*
16:	/cgn2_6/ptodata/2/pubpna/US10F_PUBCOMB.seq:*
17:	/cgn2_6/ptodata/2/pubpna/US10G_PUBCOMB.seq:*
18:	/cgn2_6/ptodata/2/pubpna/US10_PUBCOMB.seq:*
19:	/cgn2_6/ptodata/2/pubpna/US10I_PUBCOMB.seq:*
20:	/cgn2_6/ptodata/2/pubpna/US11_NEW_PUB.seq:*
21:	/cgn2_6/ptodata/2/pubpna/US11A_PUBCOMB.seq:*
22:	/cgn2_6/ptodata/2/pubpna/US60_NEW_PUB.seq:*
23:	/cgn2_6/ptodata/2/pubpna/US60_PUBCOMB.seq:*

SUMMARIES

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

Result No.	Score	% Query Match	Length	DB	ID	Description
1	402	100.0	402	9	US-09-755-633-7	Sequence 7, Appli
2	402	100.0	402	9	US-09-755-633-8	Sequence 8, Appli
3	402	100.0	402	14	US-10-218-654-83	Sequence 83, Appl
4	402	100.0	402	14	US-10-218-654-84	Sequence 84, Appl
5	402	100.0	402	15	US-10-262-439-83	Sequence 83, Appl
6	402	100.0	402	15	US-10-262-439-84	Sequence 84, Appl
7	402	100.0	402	19	US-10-787-382-7	Sequence 7, Appli

c	8	402	100.0	402	19	US-10-787-382-8	Sequence 8, Appli
c	9	402	100.0	402	9	US-09-755-633-4	Sequence 4, Appli
c	10	402	100.0	402	9	US-09-755-633-6	Sequence 6, Appli
c	11	402	100.0	402	14	US-10-218-654-80	Sequence 80, Appl
c	12	402	100.0	402	14	US-10-218-654-82	Sequence 82, Appl
c	13	402	100.0	402	15	US-10-262-439-80	Sequence 80, Appl
c	14	402	100.0	402	15	US-10-262-439-82	Sequence 82, Appl
c	15	402	100.0	610	19	US-10-787-382-4	Sequence 4, Appli
c	16	402	100.0	610	19	US-10-787-382-6	Sequence 6, Appli
c	17	345	85.8	345	9	US-09-755-633-11	Sequence 11, Appl
c	18	345	85.8	345	9	US-09-755-633-18	Sequence 18, Appl
c	19	345	85.8	345	14	US-10-218-654-85	Sequence 85, Appl
c	20	345	85.8	345	14	US-10-218-654-87	Sequence 87, Appl
c	21	345	85.8	345	15	US-10-262-439-85	Sequence 85, Appl
c	22	345	85.8	345	15	US-10-262-439-87	Sequence 87, Appl
c	23	345	85.8	345	19	US-10-787-382-9	Sequence 9, Appli
c	24	345	85.8	345	19	US-10-787-382-11	Sequence 11, Appl
c	25	277.2	69.0	459	22	US-10-880-101A-85	Sequence 85, Appl
c	26	277.2	69.0	816	17	US-10-191-997-90	Sequence 90, Appl
c	27	277.2	69.0	816	21	US-10-929-182-4	Sequence 4, Appli
c	28	277.2	69.0	816	22	US-10-880-101A-87	Sequence 87, Appl
c	29	275.6	68.6	816	18	US-10-641-643-1236	Sequence 1236, Ap
c	30	275.6	68.6	816	16	US-10-787-382-11	Sequence 11, Appl
c	31	275.6	68.6	858	16	US-10-295-074-8	Sequence 8, Appli
c	32	275.6	68.6	858	20	US-10-846-911-8	Sequence 8, Appli
c	33	275.6	68.6	858	20	US-10-846-911-10	Sequence 10, Appl
c	34	259	64.4	671	9	US-09-755-633-21	Sequence 21, Appl
c	35	259	64.4	671	9	US-09-755-633-21	Sequence 21, Appl
c	36	231.4	57.6	864	16	US-10-295-074-14	Sequence 14, Appl
c	37	231.4	57.6	864	16	US-10-295-074-12	Sequence 12, Appl
c	38	231.4	57.6	864	20	US-10-846-911-12	Sequence 12, Appl
c	39	231.4	57.6	864	20	US-10-846-911-14	Sequence 14, Appl
c	40	145.8	36.3	1658	9	US-09-755-633-18	Sequence 18, Appl
c	41	145.8	36.3	1658	9	US-10-787-382-18	Sequence 18, Appl
c	42	144.2	35.9	1658	9	US-09-755-633-19	Sequence 19, Appl
c	43	144.2	35.9	1658	19	US-10-787-382-19	Sequence 19, Appl
c	44	99.4	24.7	3230	9	US-09-800-629A-78	Sequence 78, Appl
c	45	99.4	24.7	3230	19	US-10-679-532-78	Sequence 78, Appl

ALIGNMENTS

RESULT 1
US-09-755-633-7

; Sequence 7, Application US/09755633
; Patent No. US20020127200A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/09/755,633
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: Patentin Ver. 2.1
;
; SEQ ID NO 7
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
;
US-09-755-633-7

Query Match   100.0%; Score 402; DB 9; Length 402;
Best Local Similarity   100.0%;
Matches   402; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTCCTATGTTTTCTGCCTTT 60

```
RESULT 2
US-09-755-633-8/c
Sequence 8, Application US/0975563
; Patent No. US20020127200A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/09/755,633
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 8
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-755-633-8

Query Match             100.0%;  Score 402; DB 9;  Length 402;
Best Local Similarity   100.0%;  Pred. No. 6.4e-115;
Matches  402;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy    1  ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT   60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1  ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT   60

Qy   61  GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAACCTTGACACTGCTCTCCACTCAT  120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61  GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAACCTTGACACTGCTCTCCACTCAT  120

Qy  121  CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC  180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121  CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC  180

Qy  181  CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACATTGAAGAACAAAACTGCCCAC     240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181  CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACATTGAAGAACAAAACTGCCCAC     240

Qy  241  GGGGAGGCGTGTGGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC  300
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241  GGGGAGGCGTGTGGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC  300

Qy  301  CAAAAAAAAGGTGTCCAGGAGAAAGATGGAGAAAGTTCCTAGACTACCTGCAA        360
         |||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301  CAAAAAAAAGGTGTCCAGGAGAAAGATGGAGAAAGTTCCTAGACTACCTGCAA        360

Qy  361  GTATTTCTTGGTGTGTAATAAACACCCGAGTGGACACCCGGAAAGT              402
         ||||||||||||||||||||||||||||||||||||||||||||||
Db  361  GTATTTCTTGGTGTGTAATAAACACCCGAGTGGACACCCGGAAAGT              402
```

```
RESULT 3
US-10-218-654-83
Sequence 83, Application US/10218654
; Publication No. US20030099609A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/10/218,654
; CURRENT FILING DATE: 2002-08-13
; PRIOR APPLICATION NUMBER: US/09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 83
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-218-654-83

Query Match             100.0%;  Score 402; DB 14;  Length 402;
Best Local Similarity   100.0%;  Pred. No. 6.4e-115;
Matches  402;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy    1  ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT   60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1  ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT   60

Qy   61  GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAACCTTGACACTGCTCTCCACTCAT  120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61  GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAACCTTGACACTGCTCTCCACTCAT  120

Qy  121  CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC  180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121  CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC  180

Qy  181  CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACATTGAAGAACAAAACTGCCCAC     240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181  CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACATTGAAGAACAAAACTGCCCAC     240

Qy  241  GGGGAGGCGTGTGGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC  300
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241  GGGGAGGCGTGTGGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC  300

Qy  301  CAAAAAAAAGGTGTCCAGGAGAAAGATGGAGAAAGTTCCTAGACTACCTGCAA        360
         |||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301  CAAAAAAAAGGTGTCCAGGAGAAAGATGGAGAAAGTTCCTAGACTACCTGCAA        360

Qy  361  GTATTTCTTGGTGTGTAATAAACACCCGAGTGGACACCCGGAAAGT              402
         ||||||||||||||||||||||||||||||||||||||||||||||
Db  361  GTATTTCTTGGTGTGTAATAAACACCCGAGTGGACACCCGGAAAGT              402
```

RESULT 4

US-10-218-654-84/c
; Sequence 84, Application US/10218654
; Publication No. US20030099609A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/10/218,654
; CURRENT FILING DATE: 2002-08-13
; PRIOR APPLICATION NUMBER: US/09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 84
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-218-654-84

Query Match 100.0%; Score 402; DB 14; Length 402;
Best Local Similarity 100.0%; Pred. No. 6.4e-115;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  402 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 343

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTCGCAGAGACCTTGACACTGCTCTCCACTCAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  342 GCTGTAGAAAATCCCATGAATAGACTGGTCGCAGAGACCTTGACACTGCTCTCCACTCAT 283

Qy  121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  282 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 223

Qy  181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  222 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 163

Qy  241 GGGGGAGGCTGTGGGAATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  162 GGGGGAGGCTGTGGGAATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 103

Qy  301 CAAAAAAAAAGGTGTGCAGGAGGAAAGATGGGAGAGTGACAAAAGTTCCTAGACTACCTGCAA 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  102 CAAAAAAAAAGGTGTGCAGGAGGAAAGATGGGAGAGTGACAAAAGTTCCTAGACTACCTGCAA 43

Qy  361 GTATTTCTTGGTGTAATAAAACACCCGAGTGGGACACCGGAAAGT 402
          |||||||||||||||||||||||||||||||||||||||||||||
Db   42 GTATTTCTTGGTGTAATAAAACACCCGAGTGGGACACCGGAAAGT 1
```

RESULT 5
US-10-262-439-83
; Sequence 83, Application US/10262439
; Publication No. US20030143196A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/10/262,439
; CURRENT FILING DATE: 2002-09-30
; PRIOR APPLICATION NUMBER: US/09/451,527

PRIOR FILING DATE: 1999-12-01
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 83
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-262-439-83

Query Match 100.0%; Score 402; DB 15; Length 402;
Best Local Similarity 100.0%; Pred. No. 6.4e-115;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 60

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTCGCAGAGACCTTGACACTGCTCTCCACTCAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTAGAAAATCCCATGAATAGACTGGTCGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy  121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180

Qy  181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240

Qy  241 GGGGGAGGCTGTGGGAATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 GGGGGAGGCTGTGGGAATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300

Qy  301 CAAAAAAAAAGGTGTGCAGGAGGAAAGATGGGAGAGTGACAAAAGTTCCTAGACTACCTGCAA 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301 CAAAAAAAAAGGTGTGCAGGAGGAAAGATGGGAGAGTGACAAAAGTTCCTAGACTACCTGCAA 360

Qy  361 GTATTTCTTGGTGTAATAAAACACCCGAGTGGGACACCGGAAAGT 402
          |||||||||||||||||||||||||||||||||||||||||||||
Db  361 GTATTTCTTGGTGTAATAAAACACCCGAGTGGGACACCGGAAAGT 402
```

RESULT 6
US-10-262-439-84/c
; Sequence 84, Application US/10262439
; Publication No. US20030143196A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/10/262,439
; CURRENT FILING DATE: 2002-09-30
; PRIOR APPLICATION NUMBER: US/09/451,527
; PRIOR FILING DATE: 1999-12-01
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 84
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-262-439-84

RESULT 7
US-10-787-382-7
; Sequence 7, Application US/10787382
; Publication No. US20040191868A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/10/787,382
; CURRENT FILING DATE: 2004-02-24
; PRIOR APPLICATION NUMBER: US/09/755,633
; PRIOR APPLICATION NUMBER: 2001-01-05
; PRIOR FILING DATE: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 7
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-787-382-7

Query Match   100.0%; Score 402; DB 15; Length 402;
Best Local Similarity 100.0%; Pred. No. 6.4e-115;
Matches 402; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 ATGAGAAATGCTTCTCGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 402 ATGAGAAATGCTTCTCGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 343

Qy   61 GCTCTGTAGAAAATCCCATGAATAGACTGGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 342 GCTCTGTAGAAAATCCCATGAATAGACTGGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 283

Qy 121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 282 CGAACTTGGCTGATAGGCCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 223

Qy 181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 222 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 163

Qy 241 GGGGGAGGCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 162 GGGGGAGGCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 103

Qy 301 CAAAAAAAAGGTGTGCAGGAGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 102 CAAAAAAAAGGTGTGCAGGAGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 43

Qy 361 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
        ||||||||||||||||||||||||||||||||||||||||||||
Db   42 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 1

RESULT 8
US-10-787-382-8/c
; Sequence 8, Application US/10787382
; Publication No. US20040191868A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/10/787,382
; CURRENT FILING DATE: 2004-02-24
; PRIOR APPLICATION NUMBER: US/09/755,633
; PRIOR FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 8
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-787-382-8

Query Match   100.0%; Score 402; DB 19; Length 402;
Best Local Similarity 100.0%; Pred. No. 6.4e-115;
Matches 402; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 ATGAGAAATGCTTCTCGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 402 ATGAGAAATGCTTCTCGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 343

Qy   61 GCTCTGTAGAAAATCCCATGAATAGACTGGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 342 GCTCTGTAGAAAATCCCATGAATAGACTGGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 283

Qy 121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 282 CGAACTTGGCTGATAGGCCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 223

Qy 181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 222 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 163

Qy 241 GGGGGAGGCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 162 GGGGGAGGCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 103

Qy 301 CAAAAAAAAGGTGTGCAGGAGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 102 CAAAAAAAAGGTGTGCAGGAGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

RESULT 9
US-09-755-633-4
; Sequence 4, Application US/0975563
; Patent No. US20020127200A1

GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/09/755,633
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: Patentin Ver. 2.1
; SEQ ID NO 4
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (29)..(430)
US-09-755-633-4

Query Match   100.0%; Score 402; DB 9; Length 610;
Best Local Similarity 100.0%; Pred. No. 8e-115;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy     1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTCGCCTATGTTTCTGCCTTT 60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTCGCCTATGTTTCTGCCTTT 88

Qy    61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    89 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 148

Qy   121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   149 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 208

Qy   181 CAACTGTGCATTAAAGAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCCCAC 240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   209 CAACTGTGCATTAAAGAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCCCAC 268
```

RESULT 10
US-09-755-633-6/c
; Sequence 6, Application US/0975633
; Patent No. US20020127200A1

GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/09/755,633
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: Patentin Ver. 2.1
; SEQ ID NO 6
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-755-633-6

Query Match   100.0%; Score 402; DB 9; Length 610;
Best Local Similarity 100.0%; Pred. No. 8e-115;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy     1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTCGCCTATGTTTCTGCCTTT 60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   582 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGTCGCCTATGTTTCTGCCTTT 523

Qy    61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   522 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 463

Qy   121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   462 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 403

Qy   181 CAACTGTGCATTAAAGAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCCCAC 240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   402 CAACTGTGCATTAAAGAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCCCAC 343

Qy   241 GGGGAGGCTGTGGATAAACTATTCCAAAACTATTCCAAAACTGTCTTTAATAAAAGAAGAACACATAGAGGC 300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   342 GGGGAGGCTGTGGATAAACTATTCCAAAACTATTCCAAAACTGTCTTTAATAAAAGAAGAACACATAGAGGC 283

Qy   301 CAAAAAAAAGGTGTCCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   282 CAAAAAAAAGGTGTCCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 223

Qy   361 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
         ||||||||||||||||||||||||||||||||||||||||||
Db   222 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 181
```

RESULT 11
US-10-218-654-80
; Sequence 80, Application US/10218654
; Publication No. US20030099609A1

GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/10/218,654
; CURRENT FILING DATE: 2002-08-13
; PRIOR APPLICATION NUMBER: US/09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154

```
Db   102 CAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 43
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Qy   361 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
         ||||||||||||||||||||||||||||||||||||||||||
Db    42 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 1
```

```
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 80
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (29)..(430)
US-10-218-654-80

Query Match                 100.0%;    Score 402; DB 14;  Length 610;
Best Local Similarity       100.0%;    Pred. No. 8e-115;
Matches  402;  Conservative  0;   Mismatches  0;  Indels  0;  Gaps  0;

Qy       1 ATGAGAAATGCTTCTCTGAATTTGAGTTTGCTAGCTCTTGGGGGGCTCTTATGTTTCTGCCTTT 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      29 ATGAGAAATGCTTCTCTGAATTTGAGTTTGCTAGCTCTTGGGGGGCTCTTATGTTTCTGCCTTT 88

Qy      61 GCTGTAGAAAATCCCATGAATAGACTGGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      89 GCTGTAGAAAATCCCATGAATAGACTGGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 148

Qy     121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     149 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 208

Qy     181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     209 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 268

Qy     241 GGGGAGGCCTGTGGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     269 GGGGAGGCCTGTGGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 328

Qy     301 CAAAAAAAAGGTGTGCAGGAGAGAAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     329 CAAAAAAAAGGTGTGCAGGAGAGAAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388

Qy     361 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 402
           ||||||||||||||||||||||||||||||||||||||||||||
Db     389 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 430
```

```
RESULT 12
US-10-218-654-82/c
; Sequence 82, Application US/10218654
; Publication No. US20030096609A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION:  ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/10/218,654
; CURRENT FILING DATE: 2002-08-13
; PRIOR APPLICATION NUMBER: US/09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 82
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-218-654-82

Query Match                 100.0%;    Score 402; DB 14;  Length 610;
Best Local Similarity       100.0%;    Pred. No. 8e-115;
Matches  402;  Conservative  0;   Mismatches  0;  Indels  0;  Gaps  0;

Qy       1 ATGAGAAATGCTTCTCTGAATTTGAGTTTGCTAGCTCTTGGGGGGCTCTTATGTTTCTGCCTTT 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      29 ATGAGAAATGCTTCTCTGAATTTGAGTTTGCTAGCTCTTGGGGGGCTCTTATGTTTCTGCCTTT 88

Qy      61 GCTGTAGAAAATCCCATGAATAGACTGGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      89 GCTGTAGAAAATCCCATGAATAGACTGGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 148

Qy     121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180
```

```
RESULT 13
US-10-262-439-80
; Sequence 80, Application US/10262439
; Publication No. US20030143196A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION:  ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/10/262,439
; CURRENT FILING DATE: 2002-09-30
; PRIOR APPLICATION NUMBER: US/09/451,527
; PRIOR FILING DATE: 1999-12-01
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 80
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (29)..(430)
US-10-262-439-80

Query Match                 100.0%;    Score 402; DB 15;  Length 610;
Best Local Similarity       100.0%;    Pred. No. 8e-115;
Matches  402;  Conservative  0;   Mismatches  0;  Indels  0;  Gaps  0;

Qy       1 ATGAGAAATGCTTCTCTGAATTTGAGTTTGCTAGCTCTTGGGGGGCTCTTATGTTTCTGCCTTT 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     522 ATGAGAAATGCTTCTCTGAATTTGAGTTTGCTAGCTCTTGGGGGGCTCTTATGTTTCTGCCTTT 523

Qy      61 GCTGTAGAAAATCCCATGAATAGACTGGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     463 GCTGTAGAAAATCCCATGAATAGACTGGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 463

Qy     121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     403 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 403

Qy     181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     343 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 343

Qy     241 GGGGAGGCCTGTGGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     283 GGGGAGGCCTGTGGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300

Qy     301 CAAAAAAAAGGTGTGCAGGAGAGAAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     223 CAAAAAAAAGGTGTGCAGGAGAGAAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 223

Qy     361 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 402
           ||||||||||||||||||||||||||||||||||||||||||||
Db     222 GTATTTCTTGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 181
```

RESULT 14
US-10-262-439-82/c
; Sequence 82, Application US/10262439
; Publication No. US20030143196A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/10/262,439
; CURRENT FILING DATE: 2002-09-30
; PRIOR APPLICATION NUMBER: US/09/451,527
; PRIOR FILING DATE: 1999-12-01
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 82
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-262-439-82

  Query Match   100.0%; Score 402; DB 15; Length 610;
  Best Local Similarity   100.0%; Pred. No. 8e-115;
  Matches 402; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATTGTTTCTGCCTTT   60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   582 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATTGTTTCTGCCTTT   523

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCCTTGACACTGCTCTCCCACTCAT   120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   522 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCCTTGACACTGCTCTCCCACTCAT   463

Qy   121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC   180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   462 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC   403

Qy   181 CAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC   240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   402 CAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC   343

Qy   241 GGGGGAGGCCTGTGGGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAAGAAGAACACATAGAGCGC   300
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   342 GGGGGAGGCCTGTGGGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAAGAAGAACACATAGAGCGC   283

Qy   301 CAAAAAAAAGGTGTGTCAGGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA   360
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   282 CAAAAAAAAGGTGTGTCAGGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA   223

Qy   361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCCGGAAAGT   402
              ||||||||||||||||||||||||||||||||||||||||
Db   222 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCCGGAAAGT   181

RESULT 15
US-10-787-382-4
; Sequence 4, Application US/10787382
; Publication No. US20040191868A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/10/787,382
; CURRENT FILING DATE: 2004-02-24
; PRIOR APPLICATION NUMBER: US/09/755,633
; PRIOR FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: Patentin Ver. 2.1
; SEQ ID NO 4
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (29)..(430)
US-10-787-382-4

  Query Match   100.0%; Score 402; DB 19; Length 610;
  Best Local Similarity   100.0%; Pred. No. 8e-115;
  Matches 402; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATTGTTTCTGCCTTT   60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   29 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATTGTTTCTGCCTTT   88

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCCTTGACACTGCTCTCCCACTCAT   120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   89 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCCTTGACACTGCTCTCCCACTCAT   148

Qy   121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC   180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   149 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC   208

Qy   181 CAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC   240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   209 CAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC   268

Qy   241 GGGGGAGGCCTGTGGGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAAGAAGAACACATAGAGCGC   300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   269 GGGGGAGGCCTGTGGGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAAGAAGAACACATAGAGCGC   328

Qy   301 CAAAAAAAAGGTGTGTCAGGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA   360
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   329 CAAAAAAAAGGTGTGTCAGGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA   388

Qy   361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCCGGAAAGT   402
              ||||||||||||||||||||||||||||||||||||||||
Db   389 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCCGGAAAGT   430

Search completed: August 7, 2005, 19:24:56
Job time : 333.467 secs

OM nucleic - nucleic search, using sw model

GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

Run on: August 7, 2005, 18:43:18 ; Search time 1710.67 Seconds
(without alignments)
8944.955 Million cell updates/sec

Title: US-10-787-382-7
Perfect score: 402
Sequence: 1 atgagaatgcttctgaattt..........ccgagtggaccaccggaaagt 402

Scoring table: IDENTITY_NUC
Gapop 10.0 , Gapext 1.0

Searched: 34239544 seqs, 1903214700 residues

Total number of hits satisfying chosen parameters: 68479088

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :   EST:*
1: gb_est1:*
2: gb_est2:*
3: gb_htc:*
4: gb_est3:*
5: gb_est4:*
6: gb_est5:*
7: gb_est6:*
8: gb_gss1:*
9: gb_gss2:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Match Length	DB	ID	Description
1	277.2	69.0	405	9	AY412020	AY412020 Homo sapi
2	277.2	69.0	456	9	CD559932	CD559932 AGENCOURT
c 3	277.2	69.0	456	6	CD559686	CD559686 AGENCOURT
c 4	277.2	69.0	470	6	CD559687	CD559687 AGENCOURT
c 5	277.2	69.0	492	6	CD559533	CD559533 AGENCOURT
6	273.2	68.0	405	9	AY412021	AY412021 Pan trogl
7	266.8	66.4	456	3	BC066281	BC066281 Homo sapi
c 8	266.8	66.4	467	6	CD559688	CD559688 AGENCOURT
c 9	266.4	66.4	478	6	CD559534	CD559534 AGENCOURT
10	266.2	66.4	458	3	BC066279	BC066279 Homo sapi
11	266.2	66.2	458	6	BC066280	BC066280 Homo sapi
12	266.2	66.2	463	6	CD559535	CD559535 AGENCOURT
c 13	266.2	66.2	473	6	CD559689	CD559689 AGENCOURT
14	266.2	66.2	489	6	CD559536	CD559536 AGENCOURT
15	266.2	65.8	817	3	BC069137	BC069137 Homo sapi
c 16	264.6	66.2	467	6	CD559690	CD559690 AGENCOURT
17	261.6	65.1	477	6	CD559608	CD559608 AGENCOURT
18	192.6	47.9	399	9	AY412022	AY412022 Mus muscu
19	131.8	32.8	622	9	CE331159	CE331159 tigr-gss-
20	92.6	23.0	495	7	CR554944	CR554944 DKFZp469N
c 21	.78	19.4	503	5	BQ598873	BQ598873 MI-P-E4-a
c 22	74.2	18.5	781	9	CR235404	CR235404 Reverse s
c 23	58.2	14.5	737	9	CR026247	CR026247 Reverse s
c 24	40.6	10.1	522	4	BI670794	BI670794 PEBST0aa0
25	40	10.0	317	6	CD087271	CD087271 MC1-0036T
26	39.8	9.9	535	8	A2370501	A2370501 1M0121K03
27	39.6	9.9	863	9	AG405650	AG405650 Mus muscu
28	39.2	9.8	603	4	BJ328562	BJ328562 BJ328562
29	39.2	9.8	619	4	BJ328648	BJ328648 BJ328648
30	39.2	9.8	905	9	CNS000D59	CNS000D59 Drosophil
31	38.8	9.6	1359	4	B5543026	B5543026 B5543026
32	38.2	9.6	667	9	CE510121	CE510121 CH40 441
33	38.2	9.5	797	9	CC567321	CC567321 tigr-gss-
34	38	9.5	432	1	AA565040	AA565040 v119f05.r
35	38	9.5	494	6	CB094467	CB094467 hz70d02.b
36	38	9.5	623	8	AQ576964	AQ576964 nbxb00090I
37	38	9.5	666	8	AQ326668	AQ326668 nbxb0038G
38	38	9.4	1011	9	AL076645	AL076645 Drosophil
c 39	37.8	9.4	584	5	B9526053	B9526053 NISC_no14
40	37.8	9.4	671	5	BX707130	BX707130 BX707130
41	37.8	9.4	715	5	BX758408	BX758408 BX758408
42	37.8	9.4	724	5	BX773473	BX773473 BX773473
43	37.8	9.4	783	5	BX773491	BX773491 BX773491
44	37.8	9.4	783	7	CF343019	CF343019 AGENCOURT
45	37.8	9.4	892	5	BX776535	BX776535 BX776535

ALIGNMENTS

RESULT 1
AY412020

LOCUS   AY412020   405 bp   DNA   linear   GSS 16-DEC-2003
DEFINITION   Homo sapiens IL5 gene, VIRTUAL TRANSCRIPT, partial sequence,
genomic survey sequence.
ACCESSION   AY412020
VERSION   AY412020.1   GI:39767985
KEYWORDS   GSS.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 405)
AUTHORS   Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
Adams,M.D. and Cargill,M.
TITLE   Inferring nonneutral evolution from human-chimp-mouse orthologous
gene trios
JOURNAL   Science 302 (5652), 1960-1963 (2003)
PUBMED   14671302
REFERENCE   2 (bases 1 to 405)
AUTHORS   Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
Adams,M.D. and Cargill,M.
TITLE   Direct Submission
JOURNAL   Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive,
Rockville, MD 20850, USA
COMMENT   This sequence was made by sequencing genomic exons and ordering
them based on alignment.
FEATURES   Location/Qualifiers
source   1..405
/organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
gene   <1..>405
/gene="IL5"
/locus_tag="HCM4418"
ORIGIN

Qy   Query Match   69.0%;   Score 277.2;   DB 9;   Length 405;
Best Local Similarity   80.6%;   Pred. No. 3.5e-67;
Matches 324;   Conservative 0;   Mismatches 78;   Indels 0;   Gaps 0;

Qy   1 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCCTCTTGGGGCTCGCCGTATGTTTCTGCCTTT 60
      ||||| |||||||||| ||||||||||||||||||||||||||||| | ||||||||| ||||

Db   1 ATGAGGATGGCTTCTGCCATTTGAGTTTGCTTAGCTCTTGGAGCTGCCTACGTGTATGCCATC 60
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Qy   61 GCTGTAGAAAATCCCATGAATAGACTCTTGGCACAGAGACCCTTGACACTGCTCTCCACTCAT 120

Db   61 CCCACAGAAAATCCCACAAGTGCATTGGTGAAAGAGAGACCCTTGGCACTGCTTTCTACTCAT 120
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Qy 121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAATCAC 180

Db 121 CGAACTCTGCTGATAGCCAATGAGACTCTGAGGATTCCTGTTCCTGTACATAAAAATCAC 180
         ||||||||||||||||||||||||||||||
Qy 181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAACAAACCCCAC 240

Db 181 CAACTGTGCACTGAAGAAATCTTTCAGGGAATAGGCCACACTGAGGAGAGTCAAAACTGTGCAA 240
         ||||||||||||||||||||||||||||||
Qy 241 GGGGGAGGCCCTGTGGGATAAATTATTTGTCTTTAATAAAAGAACACATAGAGCGC 300

Db 241 GGGGGTACTGTGGAAAGACTATTCAAAAACTTGTCCTTTAATAAAAGAATACATTGACGGC 300
         ||||||||||||||||||||||||||||
Qy 301 CAAAAAAAAAAAGTGTGGAGAAGAAAGACCGAGTAAACCAATTCCTAGACTACCTGCAA 360

Db 301 CAAAAAAAAAAAGGTGTGCCAGGAAGAGATGGAGGAGAGTCCTAGACTACCTGCAA 360
         |||||||||||||||||||
Qy 361 GTATTTCTTGGGTGTAATAAACACCGGACACCGGAAAGT 402

Db 361 GAGTTTCTTGGGTGTAATGAACACCGGAGTGGAATAATAGAAAGT 402

RESULT 2
CD559532
LOCUS   CD559532   456 bp   mRNA   linear   EST 11-JUN-2003
DEFINITION AGENCOURT_14497057 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971772 5', mRNA sequence.
ACCESSION   CD559532
VERSION   CD559532.1 GI:31585600
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 456)
AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL   Unpublished (1999)
COMMENT   Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov/.

FEATURES   Location/Qualifiers
     source   1..456
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971772"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues

(from BD Biosciences/Clontech and Washington University).
PCR products are directionally cloned into the loxP sites
of the pDNR-Dual vector. Library constructed by Dr.
Narayan Bhat, Earl Bere III and Hongling Liao (Gene
Expression Laboratory, Research Technology Program, SAIC
Frederick, NCI-Frederick, Frederick, MD 21702). For
information on which gene each clone represents, please
visit our anonymous ftp site at
ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSV.dat
a Note: this is a NIH_MGC Library."

ORIGIN
Query Match
Best Local Similarity   69.0%; Score 277.2; DB 6; Length 456;
Matches 324; Conservative 0; Mismatches 78; Indels 0; Gaps 0;
                         Pred. No. 3.6e-67;

Qy   1 ATGAGGATGGCTTCTGCCATTTGAGTTTGCTTAGCTCTTGGAGCTGCCTACGTGTATGCCATC 60
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 142 CGAACTCTGCTGATAGCCAATGAGACTCTGAGGATTCCTGTTCCTGTACATAAAAATCAC 201

Qy   61 GCTGTAGAAAATCCCATGAATAGACTCTTGGCACAGAGACTGCTAGCCTCTGCCTCCACTCAT 120
         ||||||||||||||||||||||||||||||
Db 202 CAACTGTGCACTGAAGAAATCTTTCAGGGAATAGGCCACACTGAGGAGAGTCAAAACTGTGCAA 261

Qy 121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAATCAC 180
         |||||||||||||||||||||||||
Db 262 GGGGGTACTGTGGAAAGACTATTCAAAAACTTGTCCTTTAATAAAAGAATACATTGACGGC 321

Qy 181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAACAAACCCCAC 240
         |||||||||||||||||||||
Db 322 CAAAAAAAAAAAGGTGTGCCAGGAAGAGATGGAGGAGAGTCCTAGACTACCTGCAA 381

Qy 241 GGGGGAGGCCCTGTGGGATAAATTATTTGTCTTTAATAAAAGAACACATAGAGCGC 300
         ||||||||||||||||||
Db 382 GAGTTTCTTGGGTGTAATGAACACCGGAGTGGAATAATAGAAAGT 423

Qy 301 CAAAAAAAAAAAGTGTGGAGAAGAAAGACCGAGTAAACCAATTCCTAGACTACCTGCAA 360
Qy 361 GTATTTCTTGGGTGTAATAAACACCGGACACCGGAAAGT 402

RESULT 3
CD559686/c
LOCUS   CD559686   456 bp   mRNA   linear   EST 11-JUN-2003
DEFINITION AGENCOURT_14497093 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971772 3', mRNA sequence.
ACCESSION   CD559686
VERSION   CD559686.1 GI:31585754
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 456)
AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL   Unpublished (1999)
COMMENT   Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov

Plate: IRBK1 row: g column: 11
High quality sequence stop: 456.

FEATURES   Location/Qualifiers
  source   1..456
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971772"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH MGC 195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presv.dat
                     a Note: this is a NIH_MGC Library."

ORIGIN

Query Match   69.0%;   Score 277.2;   DB 6;   Length 456;
Best Local Similarity   80.6%;   Pred. No. 3.6e-67;
Matches 324; Conservative   0; Mismatches   78;   Indels   0;   Gaps   0;

Qy   1 ATGAGAAATGCTTCTGAATTTGAGTTTTGCTAGCTCTTGGGGCTGCCATGTTTCTGCCTTT 60
          |||||| || |||||||||||||||||||||||| || | ||||||||||||||||||||
Db 433 ATGAGGATGCTTCTCGATTTGAGTTTGCTAGCTCTTGGGACTGCCTACGTGTATCCCATC 374

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCGAGAGACCTTGACACTGCTTCCCACTCAT 120
          |||||||||||||||||||| |||||| ||||||||||||||||||||||||||||||||
Db 373 CCCACAGAAAATCCCACAAGTGCATGGTGAAAGAGACCTTGCCACTGCTTTCTCACTCAT 314

Qy 121 CGAACTTGGCTGTGATAGGCGATGGGGAACCTGATGATTCCTACTCCCTGAAAATAAAACAC 180
          ||||||| |||||||||||| |||||||||||||||||||| || |||||| |||||||||
Db 313 CGAACTCTGCTGATAGCCAATGAGACTCTGAGGATTCCTGTTCCTGTTACATTAAAAATCAC 254

Qy 181 CAACTGTGCACTGAAGAGAAATCTTTCAGGGTATAGACACATTGAAGAGAACCAAACTGCCCAC 240
          |||| ||| | |||||||||||||||| ||||||| ||||| ||||||||||||||||||
Db 253 CAACTGTGCACTGAAGAGAAATCTTTCAGGGAATAGGCACACTGAGTGAGAGTCAAACTGTGCCA 194

Qy 241 GGGGAGGCTGTGGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
          ||||| ||||| ||| |||| |||||||||| || |||| |||| ||||||||||||||||
Db 193 GGGGGGTACTGTGGAAAGACTATTCAAAAAACTTGTCCTTAATAAAAGAAATACATTGACGGC 134

Qy 301 CAAAAAAAAAAGGTGTGCAGAGAGAAAGATGAGAGTGCACAAGTTCCTTAGACTACCTGCA 360
          |||||||||||| ||||||||||||||||||||| || ||||||||||| |||||||||||
Db 133 CAAAAAAAAAGTGTGTGAGAAGAAAAACAGAGTAAACCAATTCCTAGACTACCTTGCAA 74

Qy 361 GTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAGT 402
          ||| |||||||||||||| ||| |||||| ||||||||||||
Db   73 GAGTTTCTTCGGTGTTGTAATGACACACCGAGTGGAATAGAAAGT 32

LOCUS   CD559687/c
DEFINITION   AGENCOURT_14497029 NIH_MGC_195 Homo sapiens cDNA clone
               IMAGE:6971771 5', mRNA sequence.
ACCESSION   CD559687
VERSION   CD559687.2 GI:38453484
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
  ORGANISM   Homo sapiens

RESULT 4
CD559687/c
LOCUS   CD559687   470 bp   mRNA   linear   EST   19-NOV-2003
DEFINITION   AGENCOURT_14497029 NIH_MGC_195 Homo sapiens cDNA clone
               IMAGE:6971771 5', mRNA sequence.

REFERENCE   1 (bases 1 to 470)
  AUTHORS   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
  TITLE   NIH-MGC http://mgc.nci.nih.gov/.
  JOURNAL   Unpublished (1999)
COMMENT   National Institutes of Health, Mammalian Gene Collection (MGC)
             On Jun 10, 2003 this sequence version replaced gi:31585755.
             Contact: Daniela S. Gerhard, Ph.D.
             Office of Cancer Genomics
             National Cancer Institute / NIH
             Bldg. 31 Rm10A07 Bethesda, MD 20892
             Email: cgapbs-r@mail.nih.gov
             Tissue Procurement: Narayan Bhat
             Tissue Preparation: Bhat Laboratory
             cDNA Library Preparation: The I.M.A.G.E. Consortium (LLNL)
             cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
             DNA Sequencing by: Agencourt Bioscience Corporation
             Clone distribution: MGC clone distribution information can be
             found through the I.M.A.G.E. Consortium/LLNL at:
             http://image.llnl.gov
             Plate: IRBK1 row: g column: 10
             High quality sequence start: 14
             High quality sequence stop: 470.

FEATURES   Location/Qualifiers
  source   1..470
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971771"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH MGC 195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presv.dat
                     a Note: this is a NIH_MGC Library."

ORIGIN

Query Match   69.0%;   Score 277.2;   DB 6;   Length 470;
Best Local Similarity   80.6%;   Pred. No. 3.6e-67;
Matches 324; Conservative   0; Mismatches   78;   Indels   0;   Gaps   0;

Qy   1 ATGAGAAATGCTTCTGAATTTGAGTTTTGCTAGCTCTTGGGGCTGCCATGTTTCTGCCTTT 60
          |||||| || |||||||||||||||||||||||| || | ||||||||||||||||||||
Db 446 ATGAGGATGCTTCTCGATTTGAGTTTGCTAGCTCTTGGGACTGCCTACGTGTATCCCATC 387

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCGAGAGACCTTGACACTGCTTCCCACTCAT 120
          |||||||||||||||||||| |||||| ||||||||||||||||||||||||||||||||
Db 386 CCCACAGAAAATCCCACAAGTGCATGGTGAAAGAGACCTTGCCACTGCTTTCTCACTCAT 327

Qy 121 CGAACTTGGCTGTGATAGGCGATGGGGAACCTGATGATTCCTACTCCCTGAAAATAAAACAC 180
          ||||||| |||||||||||| |||||||||||||||||||| || |||||| |||||||||
Db 326 CGAACTCTGCTGATAGCCAATGAGACTCTGAGGATTCCTGTTCCTGTTACATTAAAAATCAC 267

Qy 181 CAACTGTGCACTGAAGAGAAATCTTTCAGGGTATAGACACATTGAAGAGAACCAAACTGCCCAC 240
          |||| ||| | |||||||||||||||| ||||||| ||||| ||||||||||||||||||
Db 266 CAACTGTGCACTGAAGAGAAATCTTTCAGGGAATAGGCACACTGAGTGAGAGTCAAACTGTGCCA 207

Qy 241 GGGGAGGCTGTGGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300
          ||||| ||||| ||| |||| |||||||||| || |||| |||| ||||||||||||||||
Db 206 GGGGGGTACTGTGGAAAGACTATTCAAAAAACTTGTCCTTAATAAAAGAAATACATTGACGGC 147

RESULT 5

```
Qy  301 CAAAAAAAAGGTGTGCAGGAGAAGATGGAGAGAGTGACAAAAGTTCCTAGACTACCTGCAA 360
        ||||| |||| ||||| |||||  | ||||||||| |||||| ||||||||||||||||||
Db  146 CAAAAAAAAGTGTGGAGAAGAAAAGACCGGAGAGAGTAACCAATTCCTAGACTACCTGCAA 87

Qy  361 GTAATTCTTGGTGTGTAATAAACACCGGAGTGGACACCGGAAAGT 402
        |||| |||||||||||||| ||||||  | |||      |||||
Db   86 GAGTTCTTGGTGTGTAATGAACACCAGGTGGATAATAGAAAGT 45
```

LOCUS   CD559533   492 bp   mRNA   linear   EST 26-NOV-2003
DEFINITION   AGENCOURT_14496993 NIH_MGC_195 Homo sapiens cDNA clone
             IMAGE:6917771 5', mRNA sequence.
ACCESSION   CD559533
VERSION   CD559533.2 GI:38558947
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 492)
AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585601.
             Contact: Daniela S. Gerhard, Ph.D.
             Office of Cancer Genomics
             National Cancer Institute / NIH
             Bldg. 31 Rm10A07 Bethesda, MD 20892
             Email: cgapbs-r@mail.nih.gov
             Tissue Procurement: Narayan Bhat
             cDNA Library Preparation: Bhat Laboratory
             cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
             DNA Sequencing by: Agencourt Bioscience Corporation
             Clone distribution: MGC clone distribution information can be
             found through the I.M.A.G.E. Consortium/LLNL at:
             http://image.llnl.gov
             Plate: IRBKi row: g column: 10
             High quality sequence start: 14
             High quality sequence stop: 492.
FEATURES   Location/Qualifiers
     source   1..492
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6917771"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSV.dat
                     a Note: this is a NIH_MGC Library."
ORIGIN

Query Match   69.0%; Score 277.2; DB 6; Length 492;
  Best Local Similarity 80.6%; Pred. No. 3.6e-67;
  Matches 324; Conservative 0; Mismatches 78; Indels 0; Gaps 0;
```

RESULT 6

```
Qy    1 ATGAGAATGTCTTCTGAATTTGAGTTTGCTAGCTCTTGTGGGGGCTGCCTATGTTGTCCTTT 60
        |||||  |||| ||||| |||||||||||| |||||| | ||| |||||||||| | | ||||
Db   56 ATGAGGAATGCTTCTGCATTTGAGTTTGCAGCTCTTGGGAGCTGCCTACGTGTATGCCATC 115

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGTGGCAGAGAGACCTTGACACTGTCTCCACTCAT 120
        |||||||||||  ||| ||||  ||| | || ||| ||||   |||||||||| | || |||
Db  116 CCCACAGAAAATTCCCACAAGTGCATTGGTGTGAAGAGACCTTGGCACTGCTTTCACTCAT 175

Qy  121 GGGGAGGCGTTCTGATAGGCCGGATGGGGAACCTGATGAGATTCCTACTCCTGAAAATAAAATCAC 180
        ||| ||||  |||||| | || ||||  |||| ||||||| |||||||||||| |||||  ||||
Db  176 CGAACTCCGTCGTGATAGCCAATGCCAATGAGACTCTGAGGGATTCCTGTTCCTGTACAGAAAATCAC 235

Qy  181 CAACTGTGCATTAAAGAAGTTTTTTCAGGGGTATAGACATTGAAGAACCAAACTGCCCAC 240
        |||||||||| | |||| |||| ||||| |||| || |  || ||||  |||| ||||||
Db  236 CAACTGTGCACTGAAGAAATCTTTCAGGGAATAGGCACACTGGAGAAGTCAAACTGTGCAA 295

Qy  241 GGGGAGGCGTTGCGATGGGTGCCAGGAGAGAAAGAATGGGAGAGTGACAAAGTGACAAAAGTTCCTAGACTACC 300
        |||||   | |   | | | | ||||||||||| || | |||| |||  |||||| || || ||||||||||
Db  296 GGGGGAGCGTTGCGGAGACTATTCAAAAACTTGTCCTTAATAAAGAATAATACATTGACGGC 355

Qy  301 CAAAAAAAAGGTGTGCAGGAGAAGATGGAGAGAGTGACAAAAGTTCCTAGACTACCTGCAA 360
        |||||||||  |||| |||||  | | || ||| ||| ||||| |||||||||||||||||
Db  356 CAAAAAAAAGTGTGGAGAAGAAAAGACCGGAGAGAGTAACCAATTCCTAGACTACCTGCAA 415

Qy  361 GTAATTCTTGGTGTGTAATAAACACCGGAGTGGACACCGGAAAGT 402
        |||| |||||||||||||| ||||||  |||||       ||||
Db  416 GAGTTCTTGGTGTGTAATGAACACCAGGTGGATAATAGAAAGT 457
```

LOCUS   AY412021   405 bp   DNA   linear   GSS 16-DEC-2003
DEFINITION   Pan troglodytes IL5 gene, VIRTUAL TRANSCRIPT, partial sequence,
             genomic survey sequence.
ACCESSION   AY412021
VERSION   AY412021.1 GI:39767986
KEYWORDS   GSS.
SOURCE   Pan troglodytes (chimpanzee)
ORGANISM   Pan troglodytes
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.
REFERENCE   1 (bases 1 to 405)
AUTHORS   Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
             Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
             Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
             Adams,M.D. and Cargill,M.
TITLE   Inferring nonneutral evolution from human-chimp-mouse orthologous
             gene trios
JOURNAL   Science 302 (5652), 1960-1963 (2003)
PUBMED   14671302
REFERENCE   2 (bases 1 to 405)
AUTHORS   Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
             Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
             Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
             Adams,M.D. and Cargill,M.
TITLE   Direct Submission
JOURNAL   Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive,
             Rockville, MD 20850, USA
COMMENT   This sequence was made by sequencing genomic exons and ordering
             them based on alignment.
FEATURES   Location/Qualifiers
     source   1..405
                     /organism="Pan troglodytes"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9598"
     gene   <1..>405
                     /gene="IL5"
                     /locus_tag="HCM4418"
ORIGIN

Query Match   68.0%; Score 273.2; DB 9; Length 405;
  Best Local Similarity 79.6%; Pred. No. 4.7e-66;
```

RESULT 7

BC066281

Matches 320; Conservative 0; Mismatches 82; Indels 0; Gaps 0;

```
Qy      1 ATGAGGAATGCTTCTGAATTTGAGTTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT 60
          ||||| |||| ||||| ||||| ||||||||||||| || |||||||||||||||||||||||
Db      1 ATGAGGATGCTTCTCGCATTTGAGTTTGCTAGCTCTTGGAGGCTGCCTACGTGTATGCCATC 60

Qy     61 GCTGTGAAAAATCCCATGAAATAGACTGGTGGCGAGAGAGACCTTGACACTGCTCTCCACTCAT 120
          ||||||   ||||||||||||| || |||||||||||||||||||||||||||||||||||||
Db     61 CCCACAGAAATCCCACAGTGCATTGGTGAAGAGAGACCTTGGCACTGCTTTCTACTCAT 120

Qy    121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCCTGAAAAATAAAATCAC 180
          ||||||||||||||| |||||||||||||||||||| ||||||||| |||||||| |||||
Db    121 CGAACTCTGCTAATAGCCCAATGAGATCTTGAGGATTCCTGTTCCCTGTACATAAAAATCAC 180

Qy    181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
          |||| | || ||||||| ||||| ||||||||||| | | ||||| |||| ||||||||
Db    181 CAACNNNGCACTGAAGAAATCTTTCAGGGAATAGGCACACTGGAGTGCAAAACTGTTGCAA 240

Qy    241 GGGGAGGCGCTGTGGATAAAACTATTCCAAAACTTGTCTCTTTAATAAAAGAACACATAGAGCGC 300
          |||||||||||||||||||||| |||||||||||| |||||| |||||||||||||| |||||
Db    241 GGGGGTACTGTGGAAAAGACTATTCAAAAAACTTGTCCTTAATAAAAGAAATACATTGAAGGC 300

Qy    301 CAAAAAAAAAGGTGTGTCCAGGAGAGAAGATGGGAGTGACAAAGTTCCTAGACTACCTGCAA 360
          ||||||||| |||||| |||||||||||| ||||||||||||||||||||||||||||||
Db    301 CAAAAAAAGTGTGAGAGAAGACGGAGAGTAAACCAATTCCTAGACTACCTGCAA 360

Qy    361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
          |||||||||||||||||||||||||||||||||||||||||
Db    361 GAGTTTCTTGGTGTAATGAACACCGAGTGGATAAATAGAAAGT 402
```

RESULT 8

CD59688/c

Query Match 66.4%; Best Local Similarity 80.6%; Conservative 0; Mismatches 77; Indels 1; Gaps 1;
Matches 324; Score 266.8; DB 3; Length 456; Pred. No. 3.1e-64;

```
Qy      1 ATGAGGAATGCTTCTGAATTTGAGTTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT 60
          ||||| |||| ||||| ||||| ||||||||||||| || |||||||||||||||||||||||
Db     24 ATGAGGATGCTTCTCGCATTTGAGTTTGCTAGCTCTTGGAGGCTGCCTACGTGTATGCCATC 83

Qy     61 GCTGTGAAAAATCCCATGAAATAGACTGGTGGCGAGAGAGACCTTGACACTGCTCTCCACTCAT 120
          ||||||   ||||||||||||| || |||||||||||||||||||||||||||||||||||||
Db     84 CCCACAGAAATCCCACAGTGCATTGGTGAAGAGAGACCTTGGCACTGCTTTCTACTCAT 143

Qy    121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCCTGAAAAATAAAATCAC 180
          ||||||||||||||| |||||||||||||||||||| ||||||||| |||||||| |||||
Db    144 CGAACTCTGCTAATAGCCCAATGAGATCTTGAGGATTCCTGTTCCCTGTACATAAAAATCAC 203

Qy    181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
          |||| | || ||||||| ||||| ||||||||||| | | ||||| |||| ||||||||
Db    204 CAACTGTGCACTGAAGAAATCTTTCAGGGAATAGGCACACTGGAGTGCAAAACTGTTGCAA 263

Qy    241 GGGGAGGCGCTGTGGATAAAACTATTCCAAAACTTGTCTCTTTAATAAAAGAACACATAGAGCGC 300
          |||||||||||||||||||||| |||||||||||| |||||| |||||||||||||| |||||
Db    264 GGGGGTACTGTGGAAAAGACTATTCAAAAAACTTGTCCTTAATAAAAGAAATACATTGAAGGC 323

Qy    301 CAAAAAAAAAGGTGTGTCCAGGAGAGAAGATGGGAGTGACAAAGTTCCTAGACTACCTGCAA 360
          ||||||||| |||||| |||||||||||| ||||||||||||||||||||||||||||||
Db    324 CAAAAAAAA-GTGTGAGAGAAGACGGAGAGTAAACCAATTCCTAGACTACCTGCAA 382

Qy    361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
          |||||||||||||||||||||||||||||||||||||||||
Db    383 GAGTTTCTTGGTGTAATGAACACCGAGTGGATAAATAGAAAGT 424
```

ORGANISM   Homo sapiens
           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
           Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE 1 (bases 1 to 467)
AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585756.
           Contact: Daniela S. Gerhard, Ph.D.
           Office of Cancer Genomics
           National Cancer Institute / NIH
           Bldg. 31 Rm10A07 Bethesda, MD 20892
           Email: cgapbs-r@mail.nih.gov
           Tissue Procurement: Narayan Bhat
           cDNA Library Preparation: Bhat Laboratory
           cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
           DNA Sequencing by: Agencourt Bioscience Corporation
           Clone distribution: MGC clone distribution information can be
           found through the I.M.A.G.E. Consortium/LLNL at:
           http://image.llnl.gov
           Plate: IRBK1 row:g column:09
           High quality sequence start: 11
           High quality sequence stop: 467.
FEATURES   Location/Qualifiers
     source   1..467
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971770"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled total RNA from 10 different tissues
                     cells lines or pooled total RNA from 30 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presv.dat
                     a Note: this is a NIH_MGC Library."

ORIGIN
Query Match   66.4%; Score 266.8; DB 6; Length 467;
Best Local Similarity 80.6%; Pred. No. 3.1e-64;
Matches 324; Conservative 0; Mismatches 77; Indels 1; Gaps 1;

Qy   1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGCGGGCGTGCCTATGTTTCTGCCTTT 60
            || |||||||||||||||||||||||||||||||||||||||||| ||| ||||||||||||||
Db   443 ATGAGGAATGCTTCTCGCATTTGAGTTTGCTAGCTCTTGGGGAGACTGCCTACCGTGTACCCATC 384

Qy   61 GCTGTGAGAAAATCCCATGAATAGACTGGTGTGGGCGCAGAGACCTTGACACTGTCTCCACTCAT 120
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   383 CCCACAGAAATTCCCACAAGTGCAATTGGTGAAAGAGACCTTGGCACTGTCTTTCTTCTACTCAT 324

Qy   121 CGAACTTGGCTGATAGGCGATTGGGAACCTGATTGATTCCTACTCCTTGAAAATAAAAATCAC 180
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   323 CGAACTCTGCTGATAGCCAATGAGACTCTGAGGAGTTCCGTTCCTGTACATTAAAAAATCAC 264

Qy   181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTTATAGACACATTGAAGAACCAAAACTGCCCAC 240
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   263 CAACTGTGCAACTGAAGAAAAATCTTTCAGGGAATAGGCCACACTGGAGAGTCAAAACTGCAA 204

Qy   241 GGGGAGGGTACTGTGGAAGACTATTCCAAAAACTTGCTTTAATAAAAAGAACACATAGAACGGC 300
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   203 GGGGGGGTACTGTGGAAGACTATTCAAAAACTTGTCTTAATAAAAAGAAATACATTGACGGC 144

Db   143 CAAAAAAAAA-GTGTGGAGAAGACAGGAGAGTGACAAAGTTGCTTAACGGCTGCAA 85
              |||||||||| ||||||||||||||||||||||||||||||||||||||||||||
Qy   301 CAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Db   84 GAGTTTCTTGGTTGTAATGAACACCCGAGTGGATAATAGAAAAGT 43
             |||||||||||||||||||||||||||||||||||||||||||
Qy   361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCCGAAAAGT 402

RESULT 9
LOCUS   CD559534   478 bp   mRNA   linear   EST 26-NOV-2003
DEFINITION AGENCOURT 14496928 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971770 5', mRNA sequence.
ACCESSION   CD559534
VERSION   CD559534.2 GI:38558949
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
  ORGANISM Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 478)
AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585602.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBK1 row:g column:09
            High quality sequence start: 3
            High quality sequence stop: 478.
FEATURES   Location/Qualifiers
     source   1..478
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971770"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled total RNA from 10 different tissues
                     cells lines or pooled total RNA from 30 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presv.dat
                     a Note: this is a NIH_MGC Library."

ORIGIN
Query Match   66.4%; Score 266.8; DB 6; Length 478;
Best Local Similarity 80.6%; Pred. No. 3.1e-64;

RESULT 10

LOCUS   BC066279   458 bp   mRNA   linear   HTC 12-FEB-2004
DEFINITION   Homo sapiens cDNA clone IMAGE:6971768, containing frame-shift
             errors.
ACCESSION   BC066279
VERSION   BC066279.1 GI:42490901
KEYWORDS   HTC.
SOURCE   Homo sapiens (human)
  ORGANISM   Homo sapiens
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 458)
  AUTHORS   Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
             Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
             Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
             Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
             Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
             Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
             Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
             Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
             Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
             McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
             Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
             Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
             Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodrigues,S.,
             Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
             Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
             Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
             Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
             Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
  TITLE   Generation and initial analysis of more than 15,000 full-length
             human and mouse cDNA sequences
  JOURNAL   Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
   PUBMED   12477932
REFERENCE   2 (bases 1 to 458)
  AUTHORS   Strausberg,R.
  TITLE   Direct Submission
  JOURNAL   Submitted (03-FEB-2004) National Institutes of Health, Mammalian
             Gene Collection (MGC), Cancer Genomics Office, National Cancer
             Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
             USA
REMARK   NIH-MGC Project URL: http://mgc.nci.nih.gov
COMMENT   Contact: MGC help desk
             Email: cgapbs-r@mail.nih.gov
             Tissue Procurement: Narayan Bhat
             cDNA Library Preparation: Bhat Laboratory
             cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
             DNA Sequencing by: Sequencing Group at the Stanford Human Genome
             Center, Stanford University School of Medicine, Stanford, CA 94305
             Web site: http://www-shgc.stanford.edu
             Contact: (Dickson, Mark) mcd@paxil.stanford.edu
             Dickson, M., Schmutz, J., Grimwood, J., Rodriguez, A., and Myers,
             R. M.
             Clone distribution: MGC clone distribution information can be found
             through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
             Series: IRAK Plate: 172 Row: a Column: 15
             This clone was selected for full length sequencing because it
             passed the following selection criteria: matched mRNA gi: 28559032
             This clone has the following problem: frame shifted.

FEATURES   Location/Qualifiers
     source   1..458
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971768"
                     /tissue_type="PCR rescued clones"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH10B"
                     /note="Vector: pDNR-Dual"
ORIGIN

Query Match   66.2%;   Score 266.2; DB 3; Length 458;
Best Local Similarity   80.4%; Pred. No. 4.6e-64;
Matches 324; Conservative   0; Mismatches   78; Indels   1; Gaps   1;

Qy   1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATNGTTTCTGCCTTT 60
              ||||||||||||||||||||||||||||||||||||||||||||| ||||||||||||||
Db   24 ATGAGGAATGCTTCTGCATTTGAGTTTGCTAGCTCTTGAGCTGCCTACGTGTATGCCATC 83

Qy   61 GCTGTAGAAAATCCCATGAAATAGACTGTTGGCGAGAGACTTGACACTGCTCTCCACTCAT 120
              |||||| |||||||||||||||||||| || ||||||||||||||||||||||||||||
Db   84 CCCACAGAAAATCCCACAAGTGCATTGGGTGAAAGAGACCTTGACACTGCTTTCTACTCAT 143

Qy   121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   144 CGAACTCTGCTGATAGCCAATGAGACTCTGAGGATTCCTGTTCCTGTACATAAAAATCAC 203

Qy   181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   204 CAACTGTGCACTGAAGAAGTTTTTCAGGGAATAGGCCACACTGGAGAGTCAAAACTGTGCAA 263

Qy   241 GGGGAGGCCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAAGAACACATAGAGCGC 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   264 GGGGGTACTGTGGAAAGACTATTCAAAAAACTTGTCCTTAATAAAGAAATACATTGACGGC 323

Qy   301 CAAAAAAAAAGGTGTCCAGGAGGAGAGATGGGAGGTGACAAAGTTCCTAGACTACCTGCAA 360
              |||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   324 C-AAAAAAAAAAGTGTGGAGAAGAGAGACGGAGAGTGAAACCAATTCCTAGACTACCTCGA 383

Qy   361 GTATTTCTTGGGTGTAATAAATAAACACCGAGTGGACACCGGAAAGT 402
              |||||||||||||||||||||||||||||||||||||||||||||||
Db   384 AGAGTTTCTTGGTGTAATGAACACCGAGTGGATAATAGAAAGT 426

RESULT 11

LOCUS   BC066280   458 bp   mRNA   linear   HTC 12-FEB-2004
DEFINITION   Homo sapiens cDNA clone IMAGE:6971769, containing frame-shift
             errors.
ACCESSION   BC066280
VERSION   BC066280.1 GI:42490838
KEYWORDS   HTC.
SOURCE   Homo sapiens (human)

```
ORGANIZM     Homo sapiens
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE    1 (bases 1 to 458)
AUTHORS      Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
             Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
             Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
             Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
             Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
             Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
             Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
             Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
             Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
             McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
             Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
             Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
             Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodrigues,S.,
             Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
             Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
             Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
             Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
             Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
TITLE        Generation and initial analysis of more than 15,000 full-length
             human and mouse cDNA sequences
JOURNAL      Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
PUBMED       1247932
REFERENCE    2 (bases 1 to 458)
AUTHORS      Strausberg,R.
TITLE        Direct Submission
JOURNAL      Submitted (03-FEB-2004) National Institutes of Health, Mammalian
             Gene Collection (MGC), Cancer Genomics Office, National Cancer
             Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
             USA
REMARK       NIH-MGC Project URL: http://mgc.nci.nih.gov
COMMENT      Contact: MGC help desk
             Email: cgapbs-r@mail.nih.gov
             Tissue Procurement: Narayan Bhat
             cDNA Library Preparation: Bhat Laboratory
             cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
             DNA Sequencing by: Sequencing Group at the Stanford Human Genome
             Center, Stanford University School of Medicine, Stanford, CA 94305
             Web site:       http://www-shgc.stanford.edu
             Contact:   (Dickson, Mark) mcd@paxil.stanford.edu
             Dickson, M., Schmutz, J., Grimwood, J., Rodriguez, A., and Myers,
             R. M.
             Clone distribution: MGC clone distribution information can be found
             through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
             Series: IRAK Plate: 172 Row: a Column: 16
             This clone was selected for full length sequencing because it
             passed the following selection criteria: matched mRNA gi: 28559032
             This clone has the following problem: frame shifted.
FEATURES             Location/Qualifiers
     source          1..458
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:691769"
                     /tissue_type="PCR rescued clones"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH10B"
                     /note="Vector: pDNR-Dual"
ORIGIN
Query Match     66.2%;  Score 266.2;  DB 3;  Length 458;
Best Local Similarity   80.4%;  Pred. No. 4.6e-64;
Matches  324;  Conservative    0;  Mismatches  78;  Indels  1;  Gaps  1;

Qy           1 ATGAGAAATGCTTCTCGAAATTTGAGTTTTGCTTAGTCTCTTGGGCCTCGCCTTATGTTTTCTGCCTTT 60
Db          24 ATGAGAAATGCTTCTCGCATTTGAGTTTGCTTAGCTCTTGGAGCTCGCCTTACGTGTATGCCATC 83
Qy          61 GCTGTAGAAAATCCATGAATGAGTGACTGGTGGCCAGAGACCTTGACACTGCTCTCCACTCAT 120
```

```
Db          84 CCCACAGAAATTCCCACACAAGTGCATTGGTGAAAGAGAGACATTGCTTTCTACTCAT 143
                |||||||| ||||| |  | || | |||||| || ||||| ||||||    ||||  ||||||
Qy         121 CGAACTGGCTGATAGGCGATGGGAACCTGATGGATTCCTACTCCTGAAAATAAAAATCAC 180
Db         144 CGAACTCTGCTGATAGCCATTGAGACTCGAGGAGATTCCTGTTCCTGTACAATAAAAATCAC 203
                ||||| | |||||||  | ||| ||| | || |||||||| |||| | ||||||||||||
Qy         181 CAACTCTGCATTAAACAAGTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240
Db         204 CAACTCGTGCCACTGAAGAAAATCTTCAGGGAAATAGGCACACTGGAGGAGTCAAAACTGTGCAA 263
                ||||| ||  |||||| ||||| |||||||  ||||  || |||| || || |||||| || |||
Qy         241 GGGGAGGGCCTCTGGATAAAACTATTCCAAAAACTGTCTTTAATTAAAAGAAACACATAGAGCGC 300
Db         264 GGGGGGTACTGTGGAAAGACTATTCAAAAAACTTGTCCTTAATAAAGAAAATACATTGACGGC 323
                ||||  |  | |||| |||| ||||  ||||| || ||  ||||| |||||||| || ||| |
Qy         301 C-AAAAAAAAAGGTGTGTGAATAAACACCCAGTGACACCCGAAAGT 359
Db         324 CAAAAAAAAAAGTGTGGAAGAAAGACCGGAGTAAAACCAATTCCTAGACTACCTGCA 383
                | |||||||||| |||| |  || |  | |||| |||||  |||| |||| || |||
Qy         360 AGTATTTCTTGGTGTATAATAAACACCCAGTGACACCCGAAAGT 402
Db         384 AGAGTTTCTTGGTGTAATGAACACCCAGTGGGATAATAGAAAAGT 426
                | ||||||||||||| | |  |||||||| | |  || | |||||
```

```
RESULT 12
LOCUS       CD559535                 463 bp    mRNA    linear    EST 26-NOV-2003
DEFINITION  AGENCOURT_14496865 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971769 5', mRNA sequence.
ACCESSION   CD559535
VERSION     CD559535.2  GI:38558950
KEYWORDS    EST.
SOURCE      Homo sapiens (human)
ORGANISM    Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 463)
AUTHORS     NIH-MGC http://mgc.nci.nih.gov/.
TITLE       National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL     Unpublished (1999)
COMMENT     On Jun 10, 2003 this sequence version replaced gi:31585603.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBK1 row: g  column: 08
            High quality sequence stop: 463.
FEATURES             Location/Qualifiers
     source          1..463
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971769"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cell lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
```

RESULT 13

CD559689/c

LOCUS   CD559689   473 bp   mRNA   linear   EST 19-NOV-2003
DEFINITION AGENCOURT_14496901 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971769 5', mRNA sequence.
ACCESSION   CD559689
VERSION   CD559689.2 GI:38453487
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 473)
AUTHORS   Narayan Bhat, Earl Bere III and Hongling Liao
TITLE   NIH-MGC http://mgc.nci.nih.gov/.
JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585757.
            Contact: Daniela S. Gerhard, Ph.D.
            National Cancer Institute / NIH
            Office of Cancer Genomics
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapb-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBKl row: g column: 08

Best Local Similarity   80.4%;
Matches 324; Conservative   0; Mismatches   78; Indels   1; Gaps   1;

Qy   1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT 60
           |||||||||||||||||||||||||||||||||||||||||||||| ||||||||||||||
Db   28 ATGAGGAATGCTTCTGCATTTGAGTTTGCTAGCTCTTGGGAGCTGCCTACGTGTCCCATC 87

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
           ||| ||||||||||||| ||||||||||||||||||||||||||||||||||||||||||
Db   88 CCCACAGAAATTCCCACAAGTGCATTGGTGAAGAGACCTTGGCACTGCTTTCTACTCAT 147

Qy   121 CGAACTTGGCTGATAGGCGATGGGAAACCTGATGAATTCCTACTCCTGAAAATAAAATCAC 180
           |||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||
Db   148 CGAACTCTGCTGATAGCCAATGAGACTCTGAGGATTCCTGTTCCTGTACATTAAAAATCAC 207

Qy   181 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACAATTGAAGAAGACCAAAACTGCCAC 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   208 CAACTGTGCACTGAAGAAATCTTTCAGGGGAATAGGCCACCACTGGAGAGTCAAAACTGCAA 267

Qy   241 GGGGAGGGCTGTGGAATAACATATTCTCTTTAATAAAAGAACACATAGAGCGC 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   268 GGGGGTACTCGTGGAAAGACTATTCAAAAACTTGTCCTTAATAAAAATACAATTGAGCGGC 327

Qy   301 C-AAAAAAAAGGTGTGCAGGAGGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCA 359
            | |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   328 CAAAAAAAAAGTGTGGGAGAAGAAGACACGGAGAGTAAACCAATTCCTAGACTACCTGCA 387

Qy   360 AGTATTTCTTGGTGTAATAAACACCCGAGTGGACACCGGAAAGT 402
           ||||||||||||||||||||||||||||||||||||||||||
Db   388 AGAGTTTCTTGGTGTAATGAACACCCGAGTGGATAATAGAAAGT 430

RESULT 14

CD559536

LOCUS   CD559536   489 bp   mRNA   linear   EST 26-NOV-2003
DEFINITION AGENCOURT_14496804 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971768 5', mRNA sequence.
ACCESSION   CD559536
VERSION   CD559536.2 GI:38558953
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens

Best Local Similarity   80.4%; Score 266.2; DB 6; Length 473;
Matches 324; Conservative   0; Pred. No. 4.6e-64; Mismatches   78; Indels   1; Gaps   1;

Qy   1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT 60
           |||||||||||||||||||||||||||||||||||||||||||||| ||||||||||||||
Db   449 ATGAGGAATGCTTCTGCATTTGAGTTTGCTAGCTCTTGGGAGCTGCCTACGTGTCCCATC 390

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 120
           ||| ||||||||||||| |||||||||||||||||||||||||||||||||||||||||||
Db   389 CCCACAGAAATTCCCACAAGTGCATTGGTGAAGAGACCTTGGCACTGCTTTCTACTCAT 330

Qy   121 CGAACTTGGCTGATAGGCGATGGGAAACCTGATGAATTCCTACTCCTGAAAATAAAATCAC 180
           |||||||||||||||||||| |||||||||||||||||||||||||||||||||||||||
Db   329 CGAACTCTGCTGATAGCCAATGAGACTCTGAGGATTCCTGTTCCTGTACATTAAAAATCAC 270

Qy   181 CAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACAATTGAAGAAGACCAAAACTGCCAC 240
           ||||||||||| ||||||||||||||||| |||| ||||||| |||||||| |||||||||
Db   269 CAACTGTGCACTGAAGAAATCTTTCAGGGGAATAGGCCACCACTGGAGAGTCAAAACTGCAA 210

Qy   241 GGGGAGGGCTGTGGAATAACATATTCTCTTTAATAAAAGAACACATAGAGCGC 300
           ||||||||||||||||||||||||||||||||||||||||| |||| |||||
Db   209 GGGGGTACTCGTGGAAAGACTATTCAAAAACTTGTCCTTAATAAAAATACAATTGAGCGGC 150

Qy   301 C-AAAAAAAAGGTGTGCAGGAGGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCA 359
            | |||||||||||||||||||||||||||||||||||| ||||||||||||||||||
Db   149 CAAAAAAAAAGTGTGGGAGAAGAAGACACGGAGAGTAAACCAATTCCTAGACTACCTGCA 90

Qy   360 AGTATTTCTTGGTGTAATAAACACCCGAGTGGACACCGGAAAGT 402
           || |||||||||||||||| |||||||||||||| |||||||||
Db   89 AGAGTTTCTTGGTGTAATGAACACCCGAGTGGATAATAGAAAGT 47

ORIGIN

High quality sequence start: 16
High quality sequence stop: 473.

FEATURES   Location/Qualifiers
     source   1..473
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971769"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled total cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presV.dat
                     a Note: this is a NIH_MGC Library."

of the pDNR-Dual vector. Library constructed by Dr.
Narayan Bhat, Earl Bere III and Hongling Liao (Gene
Expression Laboratory, Research Technology Program, SAIC
Frederick, NCI-Frederick, Frederick, MD 21702). For
information on which gene each clone represents, please
visit our anonymous ftp site at
ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presV.dat
a Note: this is a NIH_MGC Library."

REFERENCE   1 (bases 1 to 489)
AUTHORS   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
             NIH-MGC http://mgc.nci.nih.gov/.
JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585604.
             Contact: Daniela S. Gerhard, Ph.D.
             Office of Cancer Genomics
             National Cancer Institute / NIH
             Bldg. 31 Rm10A07 Bethesda, MD 20892
             Email: cgapbs-r@mail.nih.gov
             Tissue Procurement: Narayan Bhat
             cDNA Library Preparation: Bhat Laboratory
             cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
             DNA Sequencing by: Agencourt Bioscience Corporation
             Clone distribution: MGC clone distribution information can be
             found through the I.M.A.G.E. Consortium/LLNL at:
             http://image.llnl.gov
             Plate: IRBKI   row: g   column: 07
             High quality sequence start: 17
             High quality sequence stop: 489.

FEATURES   Location/Qualifiers
     source   1..489
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971768"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector:pDNR-Dual; Site_1; loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled Cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao [Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSV.dat
                     a Note: this is a NIH_MGC Library."

ORIGIN
Query Match   66.2%;   Score 266.2;   DB 6;   Length 489;
Best Local Similarity   80.4%;   Pred. No. 4.6e-64;
Matches 324;   Conservative   0;   Mismatches 78;   Indels   1;   Gaps   1;

Qy   1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTGGGGCTGCCTATGTTTCTGCCTTT 60
             |||||||| |||| |||||||||||||||||||||||||||||||| || |||||||||||
Db   54 ATGAGGATGCTTCTCCATTTGAGTTTGCTAGCTCTGCCTACGTGTATGCCATC 113

Qy   61 GCTGTAGAAAATCCCATGAATAGACTGGTCGGCAGAGAACCTTGACACTGCTCCACTCAT 120
             |||||||||||||||||||||||||||||||||||||||||||| |||||||||||||
Db   114 CCCACAGAAATCCCACAGTGCATTGGTGAAAGAGACCTTGGCACTGCTTTCTACTCAT 173

Qy   121 CGAACTTGGCTGTGGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAATCAC 180
             ||||||||||||||||||||||||||||||||||||||||||||| ||||||||||||||
Db   174 CGAACTCTGCTGATAGCCAATGAGACTCTGAGGATTCCTGTTCCGTACATAAAAATCAC 233

Qy   181 CAACTGTGCATTAAAGAAGTTTTCAGGGTATAGACACATTGAAGAACAAACTGCCCAC 240
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   234 CAACTGTGACTGAAGAAATCTTTCAGGGAATAGGCACACTGGGAGTCAAAACTGTGCAA 293

Qy   241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTCTTTAATAAAAGAACACATAGAGCGC 300
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   294 GGGGGTACTGTGGAAAGACTATTCAAAAACTTGTCCTTAATAAAAGAAAATACATTGACGGC 353

RESULT 15
LOCUS   BC069137   817 bp   mRNA   linear   HTC 26-APR-2004
DEFINITION Homo sapiens cDNA clone IMAGE:7216996, containing frame-shift
            errors.
ACCESSION   BC069137
VERSION   BC069137.1   GI:46575644
KEYWORDS   HTC.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 817)
AUTHORS   Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
            Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
            Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
            Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
            Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
            Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
            Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
            Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
            Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
            McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
            Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
            Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
            Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodrigues,S.,
            Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
            Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
            Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
            Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
            Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
TITLE   Generation and initial analysis of more than 15,000 full-length
            human and mouse cDNA sequences
JOURNAL   Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
PUBMED   12477932
REFERENCE   2 (bases 1 to 817)
AUTHORS   Strausberg,R.
TITLE   Direct Submission
JOURNAL   Submitted (16-APR-2004) National Institutes of Health, Mammalian
            Gene Collection (MGC), Cancer Genomics Office, National Cancer
            Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
            USA
REMARK   NIH-MGC Project URL: http://mgc.nci.nih.gov
COMMENT   Contact: MGC help desk
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Anup Madan, University of Iowa
            cDNA Library Preparation: Anup Madan, University of Iowa
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Neurogenomics Research Lab,
            200 B EMRB, University of Iowa, Iowa City, IA-52242
            anup-madan@uiowa.edu
            Jessica Fahey, Tim Nelson, Jae Goon Yoon and Anup Madan

            Clone distribution: MGC clone distribution information can be found
            through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
            Series: Plate: Row: Column: 0
            This clone has the following problem: frame shifted.

FEATURES   Location/Qualifiers
     source   1..817
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:7216996"

Qy   301 C-AAAAAAAAGGTGTGCACGAGAGAAAGATGGAGAGTGGACAAAGTTCCTAGACTACCTGCA 359
             | ||||||||||||||||||||||||||||||||||||||||||||| |||||||||||||
Db   354 CAAAAAAAAAGGTGTGGAGAGAAAAGACGGAGAGTAAACCAATTCCTAGACTACCTGCA 413

Qy   360 AGTATTTCTTGGTGTGTAATAAACACACCGAGTGGACACCGGAAAGT 402
             |||||||||||||||||||||||||||||||||||||||||||||||
Db   414 AGAGTTTCTTCTTGGTGTGTAATGAACACACCGAGTGGATAATAGAAAGT 456

```
ORIGIN
        /tissue_type="Synthetic constructs"
        /clone_lib="NIH MGC_243"
        /lab_host="TOP10"
        /note="Vector: pCR Blunt II TOPO"

Query Match       66.2%;  Score 266.2;  DB 3;  Length 817;
Best Local Similarity  80.4%;  Pred. No. 5.1e-64;
Matches 324;  Conservative  0;  Mismatches  78;  Indels  1;  Gaps  1;

Qy      1 ATGAGAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT   60
          ||||||||||||| |||||| |||||||||||||||||| ||||||||||| ||||||||
Db     45 ATGAGGATGCTTCTCTGCATTTGAGTTTGCTAGCTCTTGGGAGCTGCCTACGTGTATGGCCATC  104

Qy     61 GCTGTAGAGAAAATCCCATGAATAGACTGGGGTGGCAGAGGACCTTGACACTGCTCTCCACTCAT  120
          ||||||| | ||||| |||||||| |||| ||||||||| ||||||||||| ||||| |||||
Db    105 CCCACAGAAAATTCCCACACAAGTGCATTGGTGAAAGAGACACCTTGGCACTGCTTTTCTACTCAT  164

Qy    121 CGAACTTGGCTTGATAGGCGATGGGGAACCTGATGAGTTCCTACTCCTGAAAAATAAAAATCAC  180
          ||||||||||| |||| ||||| ||||||| |||||||||||| ||||| ||||||||||
Db    165 CGAACTCTGCTGATAGCCAATGAGACTCTGAGGATTCCCGTTCCCTTACATAAAAAATCAC  224

Qy    181 CAACTCGTGCATTAAAGAAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC  240
          ||||||||| ||||||| |||||||||||||| |||||||| ||||| |||||||||||||
Db    225 CAACTGTGCACTGAAGAAAATCTTTTCAGGGAATAGGCACACTGGAGAGTCAAAACTGTGCAA  284

Qy    241 GGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC  300
          |||| |||||||| |||| ||| ||||||||||||||||||||||||||||||||
Db    285 GGGGGTACTCTGGGAAAGACTATTCAAAAAACTTGTCCTTAATAAAGAAATACATTGACGGC  344

Qy    301 CAAAAA-AAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAAGTTCCTAGACTACCTGCA  359
          |||||| ||||| |||||||||| ||||||||||||||| |||||||||||||||||||
Db    345 CAAAAAGAAAAAGTGGAGAAGAAGACGGAGAGTAAACCAATTCCTAGACTACCTGCA  404

Qy    360 AGTATTTCTTGGTGTAATAAACACCCGAGTGGACACCGGAAAGT  402
          ||||||||||||| |||||||||||||||||| ||||||||||
Db    405 AGAGTTTCTTGGTGTAATGAACACCCAGTGGATAATAGAAAAGT  447
```

Search completed: August 8, 2005, 08:46:07
Job time : 1712.67 secs

THIS PAGE BLANK (USPTO)

OM nucleic - nucleic search, using sw model

Copyright (c) 1993 - 2005 Compugen Ltd.
GenCore version 5.1.6

Run on: August 8, 2005, 13:33:24 ; Search time 1661.72 Seconds
                                    (without alignments)
                                    10060.080 Million cell updates/sec

Title: US-10-787-382-9
Perfect score: 345
Sequence: 1 tttgctgtagaaatcccat...........ccgagtcggacaccggaaagt 345
Scoring table: OLIGO_NUC
                Gapop 60.0 , Gapext 60.0
Searched: 4708233 seqs, 2422760795 residues
Word size :   0

Total number of hits satisfying chosen parameters: 9416466

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database : GenEmbl:*
            1: gb_ba:*
            2: gb_htg:*
            3: gb_in:*
            4: gb_om:*
            5: gb_ov:*
            6: gb_pat:*
            7: gb_ph:*
            8: gb_pl:*
            9: gb_pr:*
            10: gb_ro:*
            11: gb_sts:*
            12: gb_sy:*
            13: gb_un:*
            14: gb_vi:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

	Result No.	Score	% Query Match	Length	DB	ID	Description
c	1	345	100.0	345	6	BD211562	BD211562 Canine an
c	2	345	100.0	345	6	BD211563	BD211563 Canine an
c	3	345	100.0	345	6	AR241540	AR241540 Sequence
c	4	345	100.0	345	6	AR241541	AR241541 Sequence
c	5	345	100.0	345	6	AR254496	AR254496 Sequence
c	6	345	100.0	345	6	AR254497	AR254497 Sequence
c	7	345	100.0	402	6	BD211560	BD211560 Canine an
c	8	345	100.0	402	6	BD211561	BD211561 Canine an
c	9	345	100.0	402	6	AR241538	AR241538 Sequence
c	10	345	100.0	402	6	AR241539	AR241539 Sequence
c	11	345	100.0	402	6	AR254494	AR254494 Sequence
c	12	345	100.0	402	6	AR254495	AR254495 Sequence
c	13	345	100.0	610	4	AF331919	AF331919 Canis fam
c	14	345	100.0	610	6	BD211558	BD211558 Canine an
c	15	345	100.0	610	6	BD211559	BD211559 Canine an
c	16	345	100.0	610	6	AR241536	AR241536 Canine an
c	17	345	100.0	610	6	AR241537	AR241537 Sequence
c	18	345	100.0	610	6	AR254492	AR254492 Sequence
c	19	345	100.0	610	6	AR254493	AR254493 Sequence
	20	336	97.4	405	6	AR300436	AR300436 Sequence
	21	336	97.4	405	6	AX083939	AX083939 Sequence
	22	264	76.5	356	4	AF091133	AF091133 Canis fam
	23	250	72.5	343	4	AX083948	AX083948 Sequence
	24	129	37.4	1658	4	AF331920	AF331920 Canis fam
	25	43	12.5	520	4	U35038	U35038 Ovis aries
	26	43	12.5	1140	4	OAU35038	OAU35038 Ovis aries
	27	42	12.2	405	4	OAILV1	OAILV1
	28	42	12.2	529	4	SSC010088	SSC010088 Sus scrof
	29	41	11.9	197131	4	AJ133452	AJ133452 Sus scrof
	30	41	11.9	197131	4	BTINTLEUS	Z67872 B.taurus mR
	31	40	11.6	405	4	AC149665	AC149665 Bos tauru
	32	30	8.7	405	4	U91947	U91947 Equus cabal
	33	30	8.7	838	4	AF051372	AF051372 Felis cat
	34	30	8.7	405	4	AF068770	AF068770 Felis cat
	35	29	8.4	213042	2	AF025436	AF025436 Felis cat
c	36	28	8.1	405	9	AC151015	AC151015 Felis cat
	37	28	8.1	354	4	AC151015	AC151015
c	38	25	7.2	150124	2	AF294756	AF294756 Saimiri s
c	39	25	7.2	167036	2	CPU34588	U34588 Cavia porce
	40	22	6.4	450	4	OAILV2	OAILV2
	41	21	6.1	36	6	U17053	U17053 Ovis aries
	42	21	6.1	36	6	BD211603	BD211603 Canine an
	43	21	6.1	36	6	AR241581	AR241581 Sequence
	44	21	6.1	64	6	AR254537	AR254537 Sequence
	45	21	6.1	370	6	A00350	A00350 Artificial

ALIGNMENTS

RESULT 1
BD211562

```
LOCUS       BD211562                 345 bp    DNA     linear   PAT 17-JUL-2003
DEFINITION  Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same.
ACCESSION   BD211562
VERSION     BD211562.1  GI:33021332
KEYWORDS    JP 2002516104-A/68.
SOURCE      Canis familiaris (dog)
  ORGANISM  Canis familiaris
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1  (bases 1 to 345)
  AUTHORS   Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same
  JOURNAL   Patent: JP 2002516104-A 68 04-JUN-2002;
            HESKA CORP
COMMENT     OS   Canis familiaris (dog)
            PN   JP 2002516104-A/68
            PD   04-JUN-2002
            PF   28-MAY-1999 JP 2000551002
            PR   29-MAY-1998 US 60/087306
            PI   GEKREE SIM, SHUMIN YANG, MATTHEW J DREITZ, RAMANI S WONDERLING PC
            C12N15/09,A61K31/7088,A61K38/00,A61K39/00,A61K39/395,
            PC   A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/535,
            PC   C07K14/54,
            PC   C07K14/56,C07K14/705,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
            G01N33/15,
            PC   G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC
            and feline immunoregulatory proteins, nucleic acid molecules CC
            molecules and CC
            method of using the same Canine
FEATURES             Location/Qualifiers
     source          1..345
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9615"
            FH   Key             Location/Qualifiers
            FT   CDS             (1)..(345).
ORIGIN
```

```
RESULT 2
LOCUS        BD211563/c
DEFINITION   Canine and feline immunoregulatory proteins, nucleic acid molecules
             and method of using the same.
ACCESSION    BD211563
VERSION      BD211563.1  GI:33021333
KEYWORDS     JP 20025161O4-A/69.
SOURCE       Canis familiaris
  ORGANISM   Canis familiaris (dog)
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Laurasiatheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE    1  (bases 1 to 345)
  AUTHORS    Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE      Canine and feline immunoregulatory proteins, nucleic acid molecules
             and method of using the same
  JOURNAL    Patent: JP 2002516104-A 69 04-JUN-2002;
             HESKA CORP
COMMENT      OS   Canis familiaris (dog)
             PN   JP 20025161O4-A/69.
             PD   04-JUN-2002
             PF   28-MAY-1999 JP 200551002
             PR   29-MAY-1998 US   60/087306
             PI   GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
             C12N15//09,A61K31//7088,A61K38//00,A61K38//21,A61K39//00,A61K39//395,
             PC   A61K39//395,
             PC   A61K45//00,A61K48//00,A61P37//02,A61P37//04,C07K14//475,C07K14//535,
             PC   C07K14//54,
             PC   C07K14//705,C07K16//24,C07K16//28,C12N1//21,C12N5//10, PC
             G01N33//15,
             PC   G01N33//50,C12N15//00,A61K37//02,A61K37//66,C12N5//00 CC  Canine
             and feline immunoregulatory proteins, nucleic acid CC
             molecules and
             CC   method of using the same
FEATURES             Location/Qualifiers
     source          1..345
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
ORIGIN
```

```
Query Match       100.0%;   Score 345;  DB 6;  Length 345;
Best Local Similarity  100.0%;   Pred. No. 6.9e-180;
Matches 345;  Conservative 0;  Mismatches 0;  Indels 0;  Gaps 0;

Qy    1 TTTGCTGTAGAAAAATCCCATGAAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 TTTGCTGTAGAAAAATCCCATGAAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60

Qy   61 CATCGAAACTTGGCCTGATAGGCGGATGGGAACCTGACACTGCTGAAAATAAAAAT 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CATCGAAACTTGGCCTGATAGGCGGATGGGAACCTGACACTGCTGAAAATAAAAAT 120

Qy  121 CACCAACTGTGCCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 CACCAACTGTGCCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180

Qy  181 CACCGGGGAGGCGTGGGATAAACTAATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 CACCGGGGAGGCGTGGGATAAACTAATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240

Qy  241 CGCCAAAAAAAAAGGTGTGCAGGAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 CGCCAAAAAAAAAGGTGTGCAGGAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300

Qy  301 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAAGT 345
        |||||||||||||||||||||||||||||||||||||||||||||||
Db  301 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAAGT 345
```

```
RESULT 3
LOCUS        AR241540                 345 bp    DNA     linear   PAT 20-DEC-2002
DEFINITION   Sequence 85 from patent US 6471957.
ACCESSION    AR241540
VERSION      AR241540.1  GI:27287249
KEYWORDS     .
SOURCE       Unknown.
  ORGANISM   Unknown.
             Unclassified.
REFERENCE    1  (bases 1 to 345)
  AUTHORS    Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE      Canine IL-4 immunoregulatory proteins and uses thereof
  JOURNAL    Patent: US 6471957-A 85 29-OCT-2002;
FEATURES             Location/Qualifiers
     source          1..345
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN
```

```
Query Match       100.0%;   Score 345;  DB 6;  Length 345;
Best Local Similarity  100.0%;   Pred. No. 6.9e-180;
Matches 345;  Conservative 0;  Mismatches 0;  Indels 0;  Gaps 0;

Qy    1 TTTGCTGTAGAAAAATCCCATGAAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  345 TTTGCTGTAGAAAAATCCCATGAAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 286

Qy   61 CATCGAAACTTGGCTGATAGGCGGATGGGAACCTGACACTGCTGAAAATAAAAAT 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  285 CATCGAAACTTGGCTGATAGGCGGATGGGAACCTGACACTGCTGAAAATAAAAAT 226

Qy  121 CACCAACTGTGCCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  225 CACCAACTGTGCCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 166

Qy  181 CACCGGGGAGGCGTGTGGATAAACTAATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  165 CACCGGGGAGGCGTGTGGATAAACTAATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 106

Qy  241 CGCCAAAAAAAAAGGTGTGCAGGAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  105 CGCCAAAAAAAAAGGTGTGCAGGAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 46

Qy  301 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAAGT 345
        |||||||||||||||||||||||||||||||||||||||||||||||
Db   45 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAAGT 1
```

RESULT 4
AR241541/c

```
Qy    301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
          |||||||||||||||||||||||||||||||||||||||||||||
Db    301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
```

LOCUS   AR241541   345 bp   DNA   linear   PAT   20-DEC-2002
DEFINITION Sequence 87 from patent US 6471957.
ACCESSION   AR241541
VERSION   AR241541.1   GI:27287250
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 345)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine Il-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 87 29-OCT-2002;
FEATURES   Location/Qualifiers
     source   1..345
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match   100.0%; Score 345; DB 6; Length 345;
Best Local Similarity   100.0%; Pred. No. 6.9e-180;
Matches 345; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

```
Qy      1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGCAGAGAGACCTTGACACTGCTCTCCACT 60
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    345 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGCAGAGAGACCTTGACACTGCTCTCCACT 286

Qy     61 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATAGTTCCTACTCCTGAAAATAAAAAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    285 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATAGTTCCTACTCCTGAAAATAAAAAT 226

Qy    121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    225 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 166

Qy    181 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    165 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 106

Qy    241 CGCCAAAAAAAAAAGGTTGTGCAGGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    105 CGCCAAAAAAAAAAGGTTGTGCAGGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 46

Qy    301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
          |||||||||||||||||||||||||||||||||||||||||||||
Db     45 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 1
```

RESULT 5
AR254496

LOCUS   AR254496   345 bp   DNA   linear   PAT   20-DEC-2002
DEFINITION Sequence 85 from patent US 6482403.
ACCESSION   AR254496
VERSION   AR254496.1   GI:27303384
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 345)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Caniney Il-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 85 19-NOV-2002;
FEATURES   Location/Qualifiers
     source   1..345
                     /organism="unknown"
                     /mol_type="genomic DNA"

Query Match   100.0%; Score 345; DB 6; Length 345;
Best Local Similarity   100.0%; Pred. No. 6.9e-180;
Matches 345; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

ORIGIN

RESULT 6
AR254497/c

```
Db    301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
          |||||||||||||||||||||||||||||||||||||||||||||
Qy    301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
```

LOCUS   AR254497   345 bp   DNA   linear   PAT   20-DEC-2002
DEFINITION Sequence 87 from patent US 6482403.
ACCESSION   AR254497
VERSION   AR254497.1   GI:27303385
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 345)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Caniney Il-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 87 19-NOV-2002;
FEATURES   Location/Qualifiers
     source   1..345
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match   100.0%; Score 345; DB 6; Length 345;
Best Local Similarity   100.0%; Pred. No. 6.9e-180;
Matches 345; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

```
Qy      1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGCAGAGAGACCTTGACACTGCTCTCCACT 60
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    345 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGCAGAGAGACCTTGACACTGCTCTCCACT 286

Qy     61 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATAGTTCCTACTCCTGAAAATAAAAAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    285 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATAGTTCCTACTCCTGAAAATAAAAAT 226

Qy    121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    225 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 166

Qy    181 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    165 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 106

Qy    225 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 166

Qy    181 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240

Qy    165 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 106

Qy    241 CGCCAAAAAAAAAAGGTTGTGCAGGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
```

RESULT 7
BD211560
LOCUS   BD211560   402 bp   DNA   linear   PAT 17-JUL-2003
DEFINITION   Canine and feline immunoregulatory proteins, nucleic acid molecules
             and method of using the same.
ACCESSION   BD211560
VERSION   BD211560.1   GI:33021330
KEYWORDS   JP 2002516104-A/66.
SOURCE   Canis familiaris
  ORGANISM   Canis familiaris (dog)
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1 (bases 1 to 402)
  AUTHORS   Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine and feline immunoregulatory proteins, nucleic acid molecules
             and method of using the same
  JOURNAL   Patent: JP 2002516104-A 66 04-JUN-2002;
             HESKA CORP
COMMENT   OS   Canis familiaris (dog)
             PN   JP 2002516104-A/66
             PD   04-JUN-2002
             PF   28-MAY-1999 JP 2000551002
             PR   29-MAY-1998 US   60/087306
             PI   GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
             C12N15/09,A61K31/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
             PC   A61K39/395,
             PC   A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,C07K14/535,
             PC   C07K14/54,
             PC   C07K14/56,C07K14/705,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
             G01N33/15,
             PC   G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC   Canine
             and feline immunoregulatory proteins, nucleic acid CC
             molecules and
             CC   method of using the same
             FH   Key   Location/Qualifiers
             FT   source   1..402
FEATURES   Location/Qualifiers
     source   1..402
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9615"
ORIGIN

Query Match   100.0%; Score 345; DB 6; Length 402;
Best Local Similarity   100.0%;
Matches 345; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 TTTGCTGTAGAAAATCCCATGAATAGAACTCGTCGGCAGAGAACCTTGACACTGCTCTCCACT 60
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   58 TTTGCTGTAGAAAATCCCATGAATAGAACTCGTCGGCAGAGAACCTTGACACTGCTCTCCACT 117

Qy   61 CATCGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   118 CATCGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 177

Qy   121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGAGACACATTGAAGAACCAAACTGCC 180
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   178 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGAGACACATTGAAGAACCAAACTGCC 237

Qy   181 CACGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   238 CACGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 297

Qy   241 CGCCAAAAAAAGGTGTGCAGGAGAGAGATGGAGAGTGACACCGGAAAAGT 300
               ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAGTATTTCTTGGTGTAATAAAACACCGAGTGGACACCGGAAAAGT 345

Qy   105 CGCCAAAAAAAGGTGTGCAGGAGAGAGATGGAGAGTGACACCGGAAAAGTTCCTAGACTACCTG 46
               |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   45 CAAGTATTTCTTGGTGTAATAAAACACCGAGTGGACACCGGAAAAGT 1

RESULT 8
BD211561/c
LOCUS   BD211561   402 bp   DNA   linear   PAT 17-JUL-2003
DEFINITION   Canine and feline immunoregulatory proteins, nucleic acid molecules
             and method of using the same.
ACCESSION   BD211561
VERSION   BD211561.1   GI:33021331
KEYWORDS   JP 2002516104-A/67.
SOURCE   Canis familiaris
  ORGANISM   Canis familiaris (dog)
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1 (bases 1 to 402)
  AUTHORS   Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine and feline immunoregulatory proteins, nucleic acid molecules
             and method of using the same
  JOURNAL   Patent: JP 2002516104-A 67 04-JUN-2002;
             HESKA CORP
COMMENT   OS   Canis familiaris (dog)
             PN   JP 2002516104-A/67
             PD   04-JUN-2002
             PF   28-MAY-1999 JP 2000551002
             PR   29-MAY-1998 US   60/087306
             PI   GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
             C12N15/09,A61K31/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
             PC   A61K39/395,
             PC   A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,C07K14/535,
             PC   C07K14/54,
             PC   C07K14/56,C07K14/705,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
             G01N33/15,
             PC   G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC   Canine
             and feline immunoregulatory proteins, nucleic acid CC
             molecules and
             CC   method of using the same
             FH   Key   Location/Qualifiers
             FT   source   1..402
FEATURES   Location/Qualifiers
     source   1..402
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9615"
ORIGIN

Query Match   100.0%; Score 345; DB 6; Length 402;
Best Local Similarity   100.0%;
Matches 345; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 TTTGCTGTAGAAAATCCCATGAATAGAACTCGTCGGCAGAGAACCTTGACACTGCTCTCCACT 60
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   345 TTTGCTGTAGAAAATCCCATGAATAGAACTCGTCGGCAGAGAACCTTGACACTGCTCTCCACT 286

Qy   61 CATCGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   285 CATCGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 226

Qy   121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGAGACACATTGAAGAACCAAACTGCC 180
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   225 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGAGACACATTGAAGAACCAAACTGCC 166

Qy   181 CACGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   165 CACGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 106

Qy   241 CGCCAAAAAAAGGTGTGCAGGAGAGAGATGGAGAGTGACACCGGAAAAGT 300
               ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 CGCCAAAAAAAGGTGTGCAGGAGAGAGATGGAGAGTGACACCGGAAAAGT 300

Qy   301 CAAGTATTTCTTGGTGTAATAAAACACCGAGTGGACACCGGAAAAGT 345
               |||||||||||||||||||||||||||||||||||||||||||||||
Db   358 CAAGTATTTCTTGGTGTAATAAAACACCGAGTGGACACCGGAAAAGT 402

Qy   301 CAAGTATTTCTTGGTGTAATAAAACACCGAGTGGACACCGGAAAAGT 345
               |||||||||||||||||||||||||||||||||||||||||||||||
Db   298 CGCCAAAAAAAGGTGTGCAGGAGAGAGATGGAGAGTGACAAGTTCCTAGACTACCTG 357

RESULT 9

Db   105 CGCCAAAAAAAAAGGTGTGCAGGAGAGAATGGAGAGAGTGACAAAGTTCCTAGACTACCTG 46
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Qy   301 CGCCAAAAAAAAAGGTGTGCAGGAGAGAATGGAGAGAGTGACAAAGTTCCTAGACTACCTG 345

Db   45 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAGT 1
            ||||||||||||||||||||||||||||||||||||||||||||||
Db   358 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402

LOCUS   AR241538   402 bp   DNA   linear   PAT 20-DEC-2002
DEFINITION Sequence 83 from patent US 6471957.
ACCESSION   AR241538
VERSION   AR241538.1 GI:27287247
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine Il-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 83 29-OCT-2002;
FEATURES   Location/Qualifiers
     source   1..402
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match   100.0%; Score 345; DB 6; Length 402;
Best Local Similarity   100.0%; Pred. No. 6.9e-180;
Matches 345; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 TTTGCTGTAGAAAAATCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   58 TTTGCTGTAGAAAAATCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 117

Qy   61 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGAGTTCCTACTCCTGAAAATAAAT 120
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   118 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGAGTTCCTACTCCTGAAAATAAAT 177

Qy   121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATGAAGAACCAAAACTGCC 180
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   178 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATGAAGAACCAAAACTGCC 237

Qy   181 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   238 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 297

Qy   241 CGCCAAAAAAAAAGGTGTGCAGGAGAGAATGGAGAGAGTGACAAAGTTCCTAGACTACCTG 300
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   298 CGCCAAAAAAAAAGGTGTGCAGGAGAGAATGGAGAGAGTGACAAAGTTCCTAGACTACCTG 357

Qy   301 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
            |||||||||||||||||||||||||||||||||||||||||||||
Db   358 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402

RESULT 10

LOCUS   AR241539/c   402 bp   DNA   linear   PAT 20-DEC-2002
DEFINITION Sequence 84 from patent US 6471957.
ACCESSION   AR241539
VERSION   AR241539.1 GI:27287248
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine Il-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 84 29-OCT-2002;
FEATURES   Location/Qualifiers
     source   1..402
                     /organism="unknown"

ORIGIN   /mol_type="genomic DNA"

Query Match   100.0%; Score 345; DB 6; Length 402;
Best Local Similarity   100.0%; Pred. No. 6.9e-180;
Matches 345; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 TTTGCTGTAGAAAAATCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   345 TTTGCTGTAGAAAAATCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 286

Qy   61 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGAGTTCCTACTCCTGAAAATAAAT 120
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   285 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGAGTTCCTACTCCTGAAAATAAAT 226

Qy   121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATGAAGAACCAAAACTGCC 180
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   225 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATGAAGAACCAAAACTGCC 166

Qy   181 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   165 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 106

Qy   241 CGCCAAAAAAAAAGGTGTGCAGGAGAGAATGGAGAGAGTGACAAAGTTCCTAGACTACCTG 300
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   105 CGCCAAAAAAAAAGGTGTGCAGGAGAGAATGGAGAGAGTGACAAAGTTCCTAGACTACCTG 45

Qy   301 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
            |||||||||||||||||||||||||||||||||||||||||||||
Db   45 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAGT 1

RESULT 11

LOCUS   AR254494   402 bp   DNA   linear   PAT 20-DEC-2002
DEFINITION Sequence 83 from patent US 6482403.
ACCESSION   AR254494
VERSION   AR254494.1 GI:27303382
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Caniney Il-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 83 19-NOV-2002;
FEATURES   Location/Qualifiers
     source   1..402
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match   100.0%; Score 345; DB 6; Length 402;
Best Local Similarity   100.0%; Pred. No. 6.9e-180;
Matches 345; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 TTTGCTGTAGAAAAATCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   58 TTTGCTGTAGAAAAATCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 117

Qy   61 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGAGTTCCTACTCCTGAAAATAAAT 120
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   118 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGAGTTCCTACTCCTGAAAATAAAT 177

Qy   121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATGAAGAACCAAAACTGCC 180
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   178 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATGAAGAACCAAAACTGCC 237

Qy   181 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   238 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 297

Qy   241 CGCCAAAAAAAAAGGTGTGCAGGAGAGAATGGAGAGAGTGACAAAGTTCCTAGACTACCTG 300
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   298 CGCCAAAAAAAAAGGTGTGCAGGAGAGAATGGAGAGAGTGACAAAGTTCCTAGACTACCTG 357

Qy   301 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
            |||||||||||||||||||||||||||||||||||||||||||||
Db   358 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402

```
Db    298  CGCCAAAAAAAAAGGTGTGCAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  357
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Qy    301  CGCCAAAAAAAAAGGTGTGCAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  345

Db    358  CAAGTATTTCTTGGTGTTAATAAACACCGAGTGGACACCGGAAAGT  402
           ||||||||||||||||||||||||||||||||||||||||||||||
Qy    358  CAAGTATTTCTTGGTGTTAATAAACACCGAGTGGACACCGGAAAGT  402
```

RESULT 12
LOCUS   AR254495/c   402 bp   DNA   linear   PAT 20-DEC-2002
DEFINITION   Sequence 84 from patent US 6482403.
ACCESSION   AR254495
VERSION   AR254495.1 GI:27303383
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM   Unknown.
             Unclassified.
REFERENCE   1 (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Caniney IL-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 84 19-NOV-2002;
FEATURES   Location/Qualifiers
     source   1..402
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match   100.0%; Score 345; DB 6; Length 402;
Best Local Similarity   100.0%; Pred. No. 6.9e-180;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1    TTTGCTGTAGAAAAATCCCATGAAATAGACTGGTCGGCGAGAGACCTGACACTGCTCTCCACT  60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    345  TTTGCTGTAGAAAAATCCCATGAAATAGACTGGTCGGCGAGAGACCTGACACTGCTCTCCACT  286

Qy    61   CATCGAACTTGGCTGATCGCGATGGGAACCTGACTGGTGCGAGAGACCTGACACTGCTCTCCACT  120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    285  CATCGAACTTGGCTGATCGCGATGGGAACCTGACTGGTGCGAGAGACCTGACACTGCTCTCCACT  226

Qy    121  CACCAACTGTGCATTAAAGAGAGTTTTTCAGGGTATAGACACAATTGAAGACCAAACTGCC  180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    225  CACCAACTGTGCATTAAAGAGAGTTTTTCAGGGTATAGACACAATTGAAGACCAAACTGCC  166

Qy    181  CACCGGGGAGGCTGTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG  240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    165  CACCGGGGAGGCTGTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG  106

Qy    241  CGCCAAAAAAAAGGTGTGCAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  300
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    105  CGCCAAAAAAAAGGTGTGCAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  46

Qy    301  CAAGTATTTCTTGGTGTTAATAAACACCGAGTGGACACCGGAAAGT  345
           ||||||||||||||||||||||||||||||||||||||||||||||
Db    45   CAAGTATTTCTTGGTGTTAATAAACACCGAGTGGACACCGGAAAGT  1
```

RESULT 13
LOCUS   AF331919   610 bp   mRNA   linear   MAM 04-OCT-2001
DEFINITION   Canis familiaris interleukin-5 mRNA, complete cds.
ACCESSION   AF331919
VERSION   AF331919.1 GI:15919180
KEYWORDS   .
SOURCE   Canis familiaris (dog)
  ORGANISM   Canis familiaris
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1 (bases 1 to 610)
  AUTHORS   Yang,S., Sellins,K.S., Weber,E. and McCall,C.
  TITLE   Canine interleukin-5: molecular characterization of the gene and
             expression of biologically active recombinant protein
  JOURNAL   J. Interferon Cytokine Res. 21 (6), 361-367 (2001)

MEDLINE   21334408
  PUBMED   11440633
REFERENCE   2 (bases 1 to 610)
  AUTHORS   Yang,S.
  TITLE   Direct Submission
  JOURNAL   Submitted (22-DEC-2000) Immunology, Heska Corporation, 1613
             Prospect Parkway, Ft Collins, CO 80525, USA
FEATURES   Location/Qualifiers
     source   1..610
                     /organism="Canis familiaris"
                     /mol_type="mRNA"
                     /db_xref="taxon:9615"
     5'UTR   1..28
     CDS   29..433
                     /note="IL-5"
                     /codon_start=1
                     /product="interleukin-5"
                     /protein_id="AAL10715.1"
                     /db_xref="GI:15919181"
                     /translation="MRMLLNISLLALGAAYVSAPAVENPMNRLVAETLTLLSTHRTWL
                     IGDGNLMIPTPENRKNHQLCIKEYFQGIDPLKNQTAHGERAVDKLFQNLSLIKEHTERQK
                     KRCAGERWRVTKFDYLQVFLGVINTEWTPES"
     3'UTR   433..610
ORIGIN

Query Match   100.0%; Score 345; DB 4; Length 610;
Best Local Similarity   100.0%; Pred. No. 7e-180;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1    TTTGCTGTAGAAAAATCCCATGAAATAGACTGGTCGGCGAGAGACCTGACACTGCTCTCCACT  60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    86   TTTGCTGTAGAAAAATCCCATGAAATAGACTGGTCGGCGAGAGACCTGACACTGCTCTCCACT  145

Qy    61   CATCGAACTTGGCTGATCGCGATGGGAACCTGACTGGTGCGAGAGACCTGACACTGCTCTCCACT  120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    146  CATCGAACTTGGCTGATCGCGATGGGAACCTGACTGGTGCGAGAGACCTGACACTGCTCTCCACT  205

Qy    121  CACCAACTGTGCATTAAAGAGAGTTTTTCAGGGTATAGACACAATTGAAGACCAAACTGCC  180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    206  CACCAACTGTGCATTAAAGAGAGTTTTTCAGGGTATAGACACAATTGAAGACCAAACTGCC  265

Qy    181  CACCGGGGAGGCTGTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG  240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    266  CACCGGGGAGGCTGTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG  325

Qy    241  CGCCAAAAAAAAGGTGTGCAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  300
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    326  CGCCAAAAAAAAGGTGTGCAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  385

Qy    301  CAAGTATTTCTTGGTGTTAATAAACACCGAGTGGACACCGGAAAGT  345
           ||||||||||||||||||||||||||||||||||||||||||||||
Db    386  CAAGTATTTCTTGGTGTTAATAAACACCGAGTGGACACCGGAAAGT  430
```

RESULT 14
LOCUS   BD211558   610 bp   DNA   linear   PAT 17-JUL-2003
DEFINITION   Canine and feline immunoregulatory proteins, nucleic acid molecules
             and method of using the same.
ACCESSION   BD211558
VERSION   BD211558.1 GI:33021328
KEYWORDS   JP 2002516104-A/64.
SOURCE   Canis familiaris (dog)
  ORGANISM   Canis familiaris
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1 (bases 1 to 610)
  AUTHORS   Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine and feline immunoregulatory proteins, nucleic acid molecules
             and method of using the same
  JOURNAL   Patent: JP 2002516104-A 64 04-JUN-2002;
             HESKA CORP
  COMMENT   OS   Canis familiaris (dog)

RESULT 15

```
LOCUS       BD211559/c
            BD211559          610 bp    DNA      linear    PAT 17-JUL-2003
DEFINITION  Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same.
ACCESSION   BD211559
VERSION     BD211559.1  GI:33021329
KEYWORDS    JP 2002516104-A/65.
SOURCE      Canis familiaris (dog)
ORGANISM    Canis familiaris
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1  (bases 1 to 610)
AUTHORS     Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
TITLE       Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same
JOURNAL     Patent: JP 2002516104-A 65 04-JUN-2002;
            HESKA CORP
COMMENT     OS   Canis familiaris (dog)
            PN   JP 2002516104-A/65
            PN   JP 200251610A-A/64
            PD   04-JUN-2002
            PF   28-MAY-1999 JP 2000551002
            PR   29-MAY-1998 US 60/087306
            PI   GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
                 C12N15/09,A61K39/395,
            PC   A61K39/395,
            PC   A61K45/00,A61K48/00,A61P37/02,A61K38/00,C07K14/475,C07K14/535,
            PC   C07K14/54,
            PC   C07K14/56,C07K14/705,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
                 G01N33/15,
            PC   G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC  Canine
                 and feline immunoregulatory proteins, nucleic acid  CC
                 molecules and
                 method of using the same
FEATURES             Location/Qualifiers
     source          1..610
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9615"
ORIGIN
```

```
Query Match             100.0%;  Score 345;  DB 6;  Length 610;
Best Local Similarity   100.0%;  Pred. No. 7e-180;
Matches  345;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy          1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTCGTGGGCAGAGAGACCTTGACACTGCTCTCCACT  60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         86 TTTGCTGTAGAAAATCCCATGAATAGACTGGTCGTGGGCAGAGAGACCTTGACACTGCTCTCCACT 145

Qy         61 CATCGGAACTTGGCTGATAGGCCGATGGGAACCTGATCGATTCCTACTCCTGAAAATAAAAAT 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        146 CATCGGAACTTGGCTGATAGGCCGATGGGAACCTGATCGATTCCTACTCCTGAAAATAAAAAT 205

Qy        121 CACCAACTGTGCATTAAAGAGAGTTTTTCAGGGTGTATAGACACATTGAAGAAGACCAAAACTGCC 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        206 CACCAACTGTGCATTAAAGAGAGTTTTTCAGGGTGTATAGACACATTGAAGAAGACCAAAACTGCC 265

Qy        181 CACCGGGGGAGGCTGGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        266 CACCGGGGGAGGCTGGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 325

Qy        241 CGCCAAAAAAAAGGTGTGCAGGAGGAAAGATGGGAGGTGACAAAGTTCCTAGACTACCTG 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        326 CGCCAAAAAAAAGGTGTGCAGGAGGAAAGATGGGAGGTGACAAAGTTCCTAGACTACCTG 385

Qy        301 CAAGTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCGGAAAGT 345
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        386 CAAGTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCGGAAAGT 430
```

```
            PD   04-JUN-2002
            PF   28-MAY-1999 JP 2000551002
            PR   29-MAY-1998 US 60/087306
            PI   GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
                 C12N15/09,A61K39/395,
            PC   A61K39/395,
            PC   A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,C07K14/535,
            PC   C07K14/54,
            PC   C07K14/56,C07K14/705,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
                 G01N33/15,
            PC   G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC  Canine
                 and feline immunoregulatory proteins, nucleic acid  CC
                 molecules and
                 method of using the same
FEATURES             Location/Qualifiers
     source          1..610
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9615"
ORIGIN
```

```
Query Match             100.0%;  Score 345;  DB 6;  Length 610;
Best Local Similarity   100.0%;  Pred. No. 7e-180;
Matches  345;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy          1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTCGTGGGCAGAGAGACCTTGACACTGCTCTCCACT  60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        525 TTTGCTGTAGAAAATCCCATGAATAGACTGGTCGTGGGCAGAGAGACCTTGACACTGCTCTCCACT 466

Qy         61 CATCGGAACTTGGCTGATAGGCCGATGGGAACCTGATCGATTCCTACTCCTGAAAATAAAAAT 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        465 CATCGGAACTTGGCTGATAGGCCGATGGGAACCTGATCGATTCCTACTCCTGAAAATAAAAAT 406

Qy        121 CACCAACTGTGCATTAAAGAGAGTTTTTCAGGGTGTATAGACACATTGAAGAAGACCAAAACTGCC 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        405 CACCAACTGTGCATTAAAGAGAGTTTTTCAGGGTGTATAGACACATTGAAGAAGACCAAAACTGCC 346

Qy        181 CACCGGGGGAGGCTGGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        345 CACCGGGGGAGGCTGGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 286

Qy        241 CGCCAAAAAAAAGGTGTGCAGGAGGAAAGATGGGAGGTGACAAAGTTCCTAGACTACCTG 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        285 CGCCAAAAAAAAGGTGTGCAGGAGGAAAGATGGGAGGTGACAAAGTTCCTAGACTACCTG 226

Qy        301 CAAGTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCGGAAAGT 345
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        225 CAAGTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCGGAAAGT 181
```

Search completed: August 8, 2005, 20:39:50
Job time : 1662.72 secs

OM nucleic - nucleic search, using sw model

Copyright (c) 1993 - 2005 Compugen Ltd.

GenCore version 5.1.6

Run on: August 8, 2005, 09:20:09 ; Search time 231.259 Seconds
(without alignments)
8831.282 Million cell updates/sec

Title: US-10-787-382-9
Perfect score: 345
Sequence: 1 tttgcctgtagaaatcccat.........ccgagtggacaccggaagt 345

Scoring table: OLIGO_NUC
                Gapop 60.0 , Gapext 60.0

Searched: 4390206 seqs, 295987066? residues
Word size :   0

Total number of hits satisfying chosen parameters: 8780412

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database :   N_Geneseq_16Dec04:*
                1: geneseqn1980s:*
                2: geneseqn1990s:*
                3: geneseqn2000s:*
                4: geneseqn2001as:*
                5: geneseqn2001bs:*
                6: geneseqn2002as:*
                7: geneseqn2002bs:*
                8: geneseqn2003as:*
                9: geneseqn2003bs:*
                10: geneseqn2003cs:*
                11: geneseqn2003ds:*
                12: geneseqn2004as:*
                13: geneseqn2004bs:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
	1	345	100.0	345	3	AA255550	Aaz55550 Canine ma
c	2	345	100.0	345	3	AA255551	Aaz55551 Canine ma
c	3	345	100.0	402	3	AA255548	Aaz55548 Canine in
c	4	345	100.0	402	3	AA255549	Aaz55549 Canine in
c	5	345	100.0	610	3	AA255546	Aaz55546 Canine in
c	6	345	100.0	610	3	AA255547	Aaz55547 Canine in
	7	336	97.4	405	4	AAF74300	Aaf74300 Canine in
	8	270	78.3	393	4	AAF74306	Aaf74306 Canine in
	9	195	56.5	252	4	AAF74305	Aaf74305 Canine in
	10	43	12.5	399	2	AAT50756	Aat50756 Ovine IL-
	11	43	12.5	520	2	AAT50755	Aat50755 Ovine IL-
	12	30	8.7	838	8	AAT44265	Aat44265 Porcine I
	13	21	6.1	26	8	ABX75427	Abx75427 Human int
	14	21	6.1	36	1	AAN91647	Aan91647 Canine IL
	15	21	6.1	370	1	AAC68870	Aac68870 Synthetic
	16	21	6.1	375	3	AAC68870	Aac68870 Modified
	17	21	6.1	375	2	AAC68872	Aac68872 Modified
	18	21	6.1	377	3	AAV01595	Aav01595 Human int
	19	21	6.1	381	3	AAC68867	Aac68867 Modified
	20	21	6.1	385	3	AAA43842	Aaa43842 Human sec
	21	21	6.1	393	3	AAC68869	Aac68869 Modified
	22	21	6.1	393	3	AAC68874	Aac68874 Modified
	23	21	6.1	399	3	AAC68873	Aac68873 Modified
	24	21	6.1	402	1	AAN81380	Aan81380 A human B
	25	21	6.1	444	3	AAC68875	Aac68875 Modified
	26	21	6.1	864	3	AAA34857	Aaa34857 Human ade
	27	21	6.1	864	3	AAA13338	Aaa13338 Human int
	28	21	6.1	816	3	AAF20979	Aaf20979 Human low
	29	21	6.1	816	10	ADG33104	Adg33104 Human DNA
	30	21	6.1	816	10	A829667?	Abz9667? Human nuc
	31	21	6.1	816	10	ACF63368	Acf63368 Human int
	32	21	6.1	816	11	ADI31910	Adi31910 Human CDN
	33	21	6.1	816	13	ADP56009	Adp56009 Human PRO
	34	21	6.1	858	9	AAL61293	Aal61293 hIL5-P2-P
	35	21	6.1	858	9	AAL61294	Aal61294 hIL5-P30-
	36	21	6.1	864	9	AAL61296	Aal61296 hIL5.37 v
	37	21	6.1	864	9	AAL61295	Aal61295 hIL5.36 v
	38	21	6.1	864	9	AAA34858	Aaa34858 Human ade
	39	21	6.1	864	9	AAF20980	Aaf20980 Human low
	40	21	6.1	4057	9	AB296674	Abz96674 Human nuc
	41	21	6.1	4057	11	ABD20523	Abd20523 Human pul
	42	21	6.1	4057	11	ABD20522	Abd20522 Human pul
c	43	19	5.5	29	2	AAQ86377	Aaq86377 Interleuk
c	44	19	5.5	700	4	AAH92594	Aah92594 Human inf
c	45	19	5.5	768	6	ABQ29620	Abq29620 Oligonucl

ALIGNMENTS

RESULT 1
AA255550

ID   AA255550 standard; cDNA; 345 BP.
XX
AC   AAZ55550;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine mature interleukin-5 (IL-5) cDNA.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; 88.
XX
OS   Canis familiaris.
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999; 99WO-US011942.
XX
PR   29-MAY-1998; 98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wenderling RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58220.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 226-227; 264pp; English.
XX
CC   Sequences AA255546-255551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154
CC   ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune

CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targetting.
XX
SQ   Sequence 345 BP; 120 A; 68 C; 78 G; 79 T; 0 U; 0 Other;

Query Match   100.0%; Score 345; DB 3; Length 345;
Best Local Similarity   100.0%; Pred. No. 2.3e-168;
Matches 345; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCGAGAGACCTTGACACTGCTCTCCACT 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCGAGAGACCTTGACACTGCTCTCCACT 60

Qy   61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120

Qy   121 CACCAAACTGTGCATTAAAAGAAGTTTTTCAGGGTATAGAACACATTGAAGAACCAAAACTGCC 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CACCAAACTGTGCATTAAAAGAAGTTTTTCAGGGTATAGAACACATTGAAGAACCAAAACTGCC 180

Qy   181 CACGGGGAGGCTGTGGGATAAAACTATTCCAAAACTATTCTTTAATAAAAGAACACATAGAG 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CACGGGGAGGCTGTGGGATAAAACTATTCCAAAACTATTCTTTAATAAAAGAACACATAGAG 240

Qy   241 CGCCAAAAAAAAAGGTGTGCGAGGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 CGCCAAAAAAAAAGGTGTGCGAGGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300

Qy   301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
              ||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 345

RESULT 2
AA255551/c
ID   AA255551/c standard; cDNA; 345 BP.
XX
AC   AA255551;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine mature interleukin-5 (IL-5) cDNA complement.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
PN   WO961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999; 99WO-US011942.
XX
PR   29-MAY-1998; 98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58220.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,

---

PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
     Claim 1h; Page 228; 264pp; English.
XX
CC   Sequences AA255546-255551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, canine or feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF); and
CC   nucleotides which encode these immunoregulatory proteins. The proteins may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targetting
XX
SQ   Sequence 345 BP; 79 A; 78 C; 68 G; 120 T; 0 U; 0 Other;

Query Match   100.0%; Score 345; DB 3; Length 345;
Best Local Similarity   100.0%; Pred. No. 2.3e-168;
Matches 345; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCGAGAGACCTTGACACTGCTCTCCACT 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   345 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCGAGAGACCTTGACACTGCTCTCCACT 286

Qy   61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   285 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 226

Qy   121 CACCAAACTGTGCATTAAAAGAAGTTTTTCAGGGTATAGAACACATTGAAGAACCAAAACTGCC 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   225 CACCAAACTGTGCATTAAAAGAAGTTTTTCAGGGTATAGAACACATTGAAGAACCAAAACTGCC 166

Qy   181 CACGGGGAGGCTGTGGGATAAAACTATTCCAAAACTATTCTTTAATAAAAGAACACATAGAG 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   165 CACGGGGAGGCTGTGGGATAAAACTATTCCAAAACTATTCTTTAATAAAAGAACACATAGAG 106

Qy   241 CGCCAAAAAAAAAGGTGTGCGAGGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   105 CGCCAAAAAAAAAGGTGTGCGAGGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 46

Qy   301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
              ||||||||||||||||||||||||||||||||||||||||||||||
Db   45 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 1

RESULT 3
AA255548
ID   AA255548 standard; cDNA; 402 BP.
XX
AC   AA255548;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA coding region.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
PN   WO961618-A2.
XX
PD   02-DEC-1999.

Left record

```
PF   28-MAY-1999;   99WO-US011942.
XX
PR   29-MAY-1998;   98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wondering RS;
XX
DR   WPI; 2000-072623/06;
DR   P-PSDB; AAY58219.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
     useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 225; 264pp; English.
XX
CC   Sequences AAZ55546-Z55551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, canine or feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting
XX
SQ   Sequence 402 BP; 129 A; 79 C; 93 G; 101 T; 0 U; 0 Other;

Query Match             100.0%;  Score 345;  DB 3;  Length 402;
Best Local Similarity   100.0%;  Pred. No. 2.3e-168;
Matches  345;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         58 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 117

Qy         61 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        118 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 177

Qy        121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAAGAAGAACCAAACTGCC 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        178 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAAGAAGAACCAAACTGCC 237

Qy        181 CACGGGGGAGGCGTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        238 CACGGGGGAGGCGTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 297

Qy        241 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        298 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 357

Qy        301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
              |||||||||||||||||||||||||||||||||||||||||||||
Db        358 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
```

Right record

```
XX
DE   Canine interleukin-5 (IL-5) cDNA coding region complement.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PR   29-MAY-1998;   98US-0087306P.
XX
PF   28-MAY-1999;   99WO-US011942.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wondering RS;
XX
DR   WPI; 2000-072623/06;
DR   P-PSDB; AAY58219.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
     useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 226; 264pp; English.
XX
CC   Sequences AAZ55546-Z55551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, canine or feline interferon-alpha (IFN-alpha), and
CC   feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting
XX
SQ   Sequence 402 BP; 101 A; 93 C; 79 G; 129 T; 0 U; 0 Other;

Query Match             100.0%;  Score 345;  DB 3;  Length 402;
Best Local Similarity   100.0%;  Pred. No. 2.3e-168;
Matches  345;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        345 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 286

Qy         61 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        285 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 226

Qy        121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAAGAAGAACCAAACTGCC 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        225 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAAGAAGAACCAAACTGCC 166

Qy        181 CACGGGGGAGGCGTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        165 CACGGGGGAGGCGTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 106

Qy        241 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        105 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 46
```

Bottom-left block

```
RESULT 4
AAZ55549/c
ID   AAZ55549 standard; cDNA; 402 BP.
XX
AC   AAZ55549;
XX
DT   14-MAR-2000 (first entry)
```

Qy   301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345
          |||||||||||||||||||||||||||||||||||||||||||||||
Db   45 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGGACACCGGAAAGT 1

RESULT 5
AAZ55546
ID   AAZ55546 standard; cDNA; 610 BP.
XX
AC   AAZ55546;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
FH   Key   Location/Qualifiers
FH
FT   CDS   29..433
FT   /*tag= a
FT   /product= "Canine IL-5"
XX
PN   WO961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999; 99WO-US011942.
XX
PR   29-MAY-1998; 98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 223-224; 264pp; English.
XX
CC   Sequences AAZ55546-Z55551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g. antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting.
XX
SQ   Sequence 610 BP; 202 A; 114 C; 139 G; 155 T; 0 U; 0 Other;

Qy   Query Match   100.0%; Score 345; DB 3; Length 610;
      Best Local Similarity 100.0%; Pred. No. 2.3e-168;
      Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 TTTTGCTTGTTAGAAAAATCCCATGAAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCCACT 60
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   86 TTTTGCTTGTTAGAAAAATCCCATGAAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCCACT 145

Qy   61 CATCGGAACTTGGCTGATTAGGCGGATGGGAACCTTGATTGATGATTCTTACTCCTGAAAATAAAAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   146 CATCGGAACTTGGCTGATTAGGCGGATGGGAACCTTGATTGATGATTCTTACTCCTGAAAATAAAAT 205

Qy   121 CACCGGGGAGGCGTGGGATAAACTATTCCAAAACTGTGTCTTAATAAAGAGAACACATAGAG 180
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   206 CACCAACTGTCCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCGATGGCC 265

Qy   181 CACGGGGAGGCGTGGGATAAACTATTCCAAAACTGTGTCTTAATAAAGAGAACACATAGAG 240
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   206 CACCAACTGTCCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCGATGGCC 265

Qy   241 CGCCAAAAAAAAGGTGTGCAGGAGAGAGGAGAGTGACAAAGTTCCTAGACTACCTG 300
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   266 CACCGGGGAGGCGTGGGATAAACTATTCCAAAACTGTGTCTTAATAAAGAGAACACATAGAG 325

Qy   301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345
          |||||||||||||||||||||||||||||||||||||||||||||||| 1
Db   326 CGCCAAAAAAAAGGTGTGCAGGAGAGAGGAGAGTGACAAAGTTCCTAGACTACCTG 385

Qy   386 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGGACACCGGAAAGT 430

RESULT 6
AAZ55547/c
ID   AAZ55547 standard; cDNA; 610 BP.
XX
AC   AAZ55547;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA complement.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
FH   Key   Location/Qualifiers
FH
FT   CDS   complement(178..582)
FT   /*tag= a
FT   /product= "Canine IL-5"
XX
PN   WO961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999; 99WO-US011942.
XX
PR   29-MAY-1998; 98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 224-225; 264pp; English.
XX
CC   Sequences AAZ55546-Z55551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the

RESULT 7
AAF74300

ID   AAF74300 standard; DNA; 405 BP.
XX
AC   AAF74300;
XX
DT   04-MAY-2001 (first entry)
XX
DE   Canine interleukin-5 coding sequence #1.
XX
KW   Dog; interleukin-5; IL-5; allergy; cancer; gene therapy;
KW   inflammatory reaction; ds.
XX
OS   Canis sp.
XX
PN   WO20011049-A2.
XX
PD   15-FEB-2001.
XX
PF   09-AUG-2000; 2000WO-US021651.
XX
PR   10-AUG-1999; 99US-00371615.
XX
PA   (IDEX-) IDEXX LAB INC.
XX
PI   Guo H, Lawton R, Mermer B, Aiyappa AP;
XX
DR   WPI; 2001-191542/19.
DR   P-PSDB; AAB72615.
XX
PT   Novel canine interleukin 5 polynucleotide and polypeptides are used for
PT   generating antibodies which are useful in treating allergies in dogs.
XX
PS   Claim 31; Page 46; 48pp; English.
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting.
XX
SQ   Sequence 610 BP; 155 A; 139 C; 202 T; 0 U; 0 Other;

Query Match   100.0%; Score 345; DB 3; Length 610;
Best Local Similarity   100.0%; Pred. No. 2.3e-168;
Matches 345; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

```
Qy     1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   525 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 466

Qy    61 CATCGAACTTGGCTGATAGGGGATGGGAACCTGACTGATGATTCCTACTCCTGAAAATAAAAAAT 120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   465 CATCGAACTTGGCTGATAGGGGATGGGAACCTGACTGATGATTCCTACTCCTGAAAATAAAAAAT 406

Qy   121 CACCAAACTGTCCATTAAAGAAGAGTTTTTCAGGGTATAGACACACATTGAAGAACCAAAACTGCC 180
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   405 CACCAAACTGTCCATTAAAGAAGAGTTTTTCAGGGTATAGACACACATTGAAGAACCAAAACTGCC 346

Qy   181 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATTAAAGAAGACACATAGAG 240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   345 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATTAAAGAAGACACATAGAG 286

Qy   241 CGCCAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGACAAAAGTTCCTAGACTACCTG 300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   285 CGCCAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGACAAAAGTTCCTAGACTACCTG 226

Qy   301 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
         |||||||||||||||||||||||||||||||||||||||||||||
Db   225 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAGT 181
```

RESULT 8
AAF74306

ID   AAF74306 standard; DNA; 393 BP.
XX
AC   AAF74306;
XX
DT   04-MAY-2001 (first entry)
XX
DE   Canine interleukin-5 coding sequence #3.
XX
KW   Dog; interleukin-5; IL-5; allergy; cancer; gene therapy;
KW   inflammatory reaction; ds.
XX
OS   Canis sp.
XX
PN   WO20011049-A2.
XX
PD   15-FEB-2001.
XX
PF   09-AUG-2000; 2000WO-US021651.
XX
PR   10-AUG-1999; 99US-00371615.
XX
PA   (IDEX-) IDEXX LAB INC.
XX
PI   Guo H, Lawton R, Mermer B, Aiyappa AP;
XX
DR   WPI; 2001-191542/19.
XX
PT   Novel canine interleukin 5 polynucleotide and polypeptides are used for
PT   generating antibodies which are useful in treating allergies in dogs.
XX
PS   Claim 1; Page 35; 48pp; English.
CC   The present invention provides the protein and coding sequences of the
CC   canine interleukin-5 (IL-5) protein. This can be used to treat allergies,
CC   cancer and inflammatory reactions in dogs. The present sequence is one
CC   version of the IL-5 coding sequence shown in the specification
XX
SQ   Sequence 405 BP; 131 A; 77 C; 94 G; 103 T; 0 U; 0 Other;

Query Match   97.4%; Score 336; DB 4; Length 405;
Best Local Similarity   100.0%; Pred. No. 1.1e-163;
Matches 336; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

```
Qy     1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 117

Qy    61 CATCGAACTTGGCTGATAGGGGATGGGAACCTGACTGATGATTCCTACTCCTGAAAATAAAAAAT 120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   118 CATCGAACTTGGCTGATAGGGGATGGGAACCTGACTGATGATTCCTACTCCTGAAAATAAAAAAT 177

Qy   121 CACCAAACTGTCCATTAAAGAAGAGTTTTTCAGGGTATAGACACACATTGAAGAACCAAAACTGCC 180
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   178 CACCAAACTGTCCATTAAAGAAGAGTTTTTCAGGGTATAGACACACATTGAAGAACCAAAACTGCC 237

Qy   181 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATTAAAGAAGACACATAGAG 240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   238 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATTAAAGAAGACACATAGAG 297

Qy   241 CGCCAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGTGACAAAAGTTCCTAGACTACCTG 300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   298 CGCCAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGTGACAAAAGTTCCTAGACTACCTG 357

Qy   301 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACA 336
         |||||||||||||||||||||||||||||||||||||
Db   358 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACA 393
```

```
CC   cancer and inflammatory reactions in dogs. The present sequence is one
CC   version of the IL-5 coding sequence shown in the specification
XX
SQ   Sequence 393 BP; 128 A; 82 C; 86 G; 97 T; 0 U; 0 Other;

Query Match
Best Local Similarity 100.0%;  Score 270; DB 4; Length 393;
Matches 270; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   46 ACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACT 105
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 ACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACT 60

Qy  106 CCTGAAAATAAAAATCACCAAACTGTGCATTAAAAGAAGAGTTTTTCAGGGTATAGACACATTG 165
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CCTGAAAATAAAAATCACCAAACTGTGCATTAAAAGAAGAGTTTTTCAGGGTATAGACACATTG 120

Qy  166 AAGAACCAAACTGCCCACGGGGAGGCTGTGGGATAAAACTAATTCCAAAAACTTGTCTTTAATTA 225
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 AAGAACCAAACTGCCCACGGGGAGGCTGTGGGATAAAACTAATTCCAAAAACTTGTCTTTAATTA 180

Qy  226 AAAGAACACATAGAGCGCCAAAAAAAAGGTGTGCAGGAGGAAAAGATGGAGGAGTGACAAAG 285
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 AAAGAACACATAGAGCGCCAAAAAAAAGGTGTGCAGGAGGAAAAGATGGAGGAGTGACAAAG 240

Qy  286 TTTCCTAGACTACCTGCAAGTATTTCTTGGT 315
         |||||||||||||||||||||||||||||||
Db  241 TTTCCTAGACTACCTGCAAGTATTTCTTGGT 270


RESULT 9
AAF74305
ID   AAF74305 standard; DNA; 252 BP.
XX
AC   AAF74305;
XX
DT   04-MAY-2001 (first entry)
XX
DE   Canine interleukin-5 coding sequence #2.
XX
KW   Dog; interleukin-5; IL-5; allergy; cancer; gene therapy;
KW   inflammatory reaction; ds.
XX
OS   Canis sp.
XX
PN   WO20011049-A2.
XX
PD   15-FEB-2001.
XX
PF   09-AUG-2000; 2000WO-US021651.
XX
PR   10-AUG-1999; 990S-0371615.
XX
PI   Guo H, Lawton R, Mermer B, Aiyappa AP;
XX
PA   (IDEX-) IDEXX LAB INC.
XX
DR   WPI; 2001-191542/19.
DR   P-PSDB; AAB72616.
XX
PT   Novel canine interleukin 5 polynucleotide and polypeptides are used for
PT   generating antibodies which are useful in treating allergies in dogs.
XX
PS   Example 1; Fig 1; 48pp; English.
XX
CC   The present invention provides the protein and coding sequences of the
CC   canine interleukin-5 (IL-5) protein. This can be used to treat allergies,
CC   cancer and inflammatory reactions in dogs. The present sequence is one
CC   version of the IL-5 coding sequence shown in the specification
XX
SQ   Sequence 252 BP; 69 A; 54 C; 60 G; 69 T; 0 U; 0 Other;

Query Match

56.5%; Score 195; DB 4; Length 252;
```

```
Best Local Similarity 100.0%; Pred. No. 1.4e-90; Mismatches 0; Indels 0; Gaps 0;
Matches 195; Conservative 0;

Qy    1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACTTGACACTGCTCTCCACT 60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACTTGACACTGCTCTCCACT 117

Qy   61 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  118 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 177

Qy  121 CACCAAACTGTGCATTAAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  178 CACCAAACTGTGCATTAAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 237

Qy  181 CACGGGGAGGCTGTG 195
         |||||||||||||||
Db  238 CACGGGGAGGCTGTG 252


RESULT 10
AAT50756
ID   AAT50756 standard; cDNA; 399 BP.
XX
AC   AAT50756;
XX
DT   17-OCT-2003 (revised)
DT   24-SEP-1997 (first entry)
XX
DE   Ovine IL-5 cDNA.
XX
KW   Cytokine; ovine; sheep; interleukin-5; interleukin-12; IL-5; IL-12;
KW   livestock; cow; stress; transport; vaccine adjuvant; veterinary; cancer;
KW   immunosuppression; allergy; reproductive system; growth; early maturity;
KW   antibody; diagnosis; immunopotentiator;
KW   early haematopoietic progenitor cell; cytotoxic cell; thymocyte;
KW   secretion; IgM; IgA; bacterial endotoxin; gamma-interferon; ss.
XX
OS   Ovis aries.
XX
PN   WO9700321-A1.
XX
PD   03-JAN-1997.
XX
PF   14-JUN-1996; 96WO-AU000360.
XX
PR   14-JUN-1995; 95AU-0003502.
PR   27-OCT-1995; 95AU-00006244.
XX
PA   (CSIR ) COMMONWEALTH SCI & IND RES ORG.
XX
PI   Seow H, Wood P;
XX
DR   WPI; 1997-077528/07.
DR   P-PSDB; AAW08479.
XX
PT   Nucleic acid encoding ovine interleukin-5 or -12 - used as vaccine
PT   adjuvants and to treat or prevent microbial infections in livestock.
XX
PS   Claim 6; Page 41-42; 78pp; English.
XX
CC   The sequences given in AAT50755-56 encode ovine interleukin-5 (IL-5).
CC   Ovine IL-5 or IL-12 are used to treat and/or prevent infections in
CC   livestock (esp. cows and sheep), particularly where the animals are
CC   stressed, e.g. during transport. IL-5 and IL-12 can also be used as
CC   adjuvants in vaccines for veterinary use (partic. weakly immunogenic
CC   subunit or synthetic peptide vaccines). They may also be used to treat
CC   cancer, immunosuppression and allergy, to enhance/suppress the
CC   reproductive system and to promote growth or early maturity. Optionally
CC   interleukin can be delivered from constructs or delivery cells and
CC   antibodies are useful in enzyme immunoassays for rapid diagnosis of
CC   infection. The interleukins are immunopotentiators, especially IL-5
CC   promotes growth of early haematopoietic progenitor cells and generation
```

RESULT 11
ID   AAT50755 standard; DNA; 520 BP.
AC   AAT50755;
XX
DT   24-SEP-1997 (first entry)
DT   17-OCT-2003 (revised)
XX
DE   Ovine IL-5 gene.
XX
KW   Cytokine; ovine; sheep; interleukin-5; interleukin-12; IL-5; IL-12;
KW   livestock; cow; stress; transport; vaccine adjuvant; veterinary; cancer;
KW   immunosuppression; allergy; reproductive system; growth; early maturity;
KW   antibody; diagnosis; immunopotentiator;
KW   early haematopoietic progenitor cell; cytotoxic cell; thymocyte;
KW   secretion; IgM; IgA; bacterial endotoxin; gamma-interferon; ss.
XX
OS   Ovis aries.
XX
FH   Key   Location/Qualifiers
FH
FT   CDS   46..444
FT   /*tag= a
FT   /product= "Ovine IL-5"
FT   exon   46..183
FT   /*tag= b
FT   /number= 1
FT   exon   184..216
FT   /*tag= c
FT   /number= 2
FT   exon   217..345
FT   /*tag= d
FT   /number= 3
FT   exon   346..480
FT   /*tag= e
FT   /number= 4
XX
PN   WO9700321-A1.
XX
PD   03-JAN-1997.
XX
PF   14-JUN-1996; 96WO-AU000360.
XX
PR   14-JUN-1995; 95AU-00003502.
PR   27-OCT-1995; 95AU-0006244.
XX
PA   (CSIR) COMMONWEALTH SCI & IND RES ORG.
XX
PI   Seow H, Wood P;
XX
DR   WPI; 1997-077528/07.
DR   P-PSDB; AAW08479.
XX
PT   Nucleic acid encoding ovine interleukin-5 or -12 - used as vaccine
PT   adjuvants and to treat or prevent microbial infections in livestock.

CC   of cytotoxic cells from thymocytes, also it stimulates production and
CC   secretion of IgM and IgA (in synergism with bacterial endotoxin). IL-12
CC   induces production of gamma-interferon by, and proliferation of, T and NK
CC   cells, and increases the (non-)specific cytolytic lymphocyte response. The
CC   genetic constructs can also be used for in vitro production of IL-5 or -
CC   12. (Updated on 17-OCT-2003 to standardise OS field)
XX
SQ   Sequence 399 BP; 130 A; 77 C; 93 G; 99 T; 0 U; 0 Other;

Query Match   12.5%; Score 43; DB 2; Length 399;
Best Local Similarity   100.0%; Pred. No. 9.2e-12;
Matches   43; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   17 CCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCAC 59
              |||||||||||||||||||||||||||||||||||||||||||
Db   68 CCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCAC 110

XX
CC   Claim 6; Page 39-40; 78pp; English.
XX
PS
CC   The sequences given in AAT50755-56 encode ovine interleukin-5 (IL-5).
CC   Ovine IL-5 or IL-12 are used to treat and/or prevent infections in
CC   livestock (esp. cows and sheep), particularly where the animals are
CC   stressed, e.g. during transport. IL-5 and IL-12 can also be used as
CC   adjuvants in vaccines for veterinary use (partic. weakly immunogenic
CC   subunit or synthetic peptide vaccines). They may also be used to treat
CC   cancer, immunosuppression and allergy, to enhance/suppress the
CC   reproductive system and to promote growth or early maturity. Optionally
CC   interleukin can be delivered from constructs or delivery cells and
CC   antibodies are useful in enzyme immunoassays for rapid diagnosis of
CC   infection. The interleukins are immunopotentiators, especially IL-5
CC   promotes growth of early haematopoietic progenitor cells and generation
CC   of cytotoxic cells from thymocytes, also it stimulates production and
CC   secretion of IgM and IgA (in synergism with bacterial endotoxin). IL-12
CC   induces production of gamma-interferon by, and proliferation of, T and NK
CC   cells and increases the (non-)specific cytolytic lymphocyte response. The
CC   genetic constructs can also be used for in vitro production of IL-5 or -
CC   12. (Updated on 17-OCT-2003 to standardise OS field)
XX
SQ   Sequence 520 BP; 166 A; 99 C; 124 G; 131 T; 0 U; 0 Other;

Query Match   12.5%; Score 43; DB 2; Length 520;
Best Local Similarity   100.0%; Pred. No. 9.3e-12;
Matches   43; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   17 CCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCAC 59
              |||||||||||||||||||||||||||||||||||||||||||
Db   113 CCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCAC 155

RESULT 12
ID   AAZ44265 standard; DNA; 838 BP.
AC   AAZ44265;
XX
DT   31-MAR-2000 (first entry)
XX
DE   Porcine IL-5 DNA.
XX
KW   Pig; vaccine; cysticercosis; protective antigen; cC1; cC3; cC4;
KW   tenial cysticercus; gamma interferon; IFN-gamma; interleukin 5; IL-5; ss.
XX
OS   Sus scrofa.
XX
PN   CN1211339-A.
XX
PD   13-OCT-1999.
XX
PF   29-JAN-1999; 99CN-00113447.
XX
PR   29-JAN-1999; 99CN-00113447.
XX
PA   (UYTW-) UNIV NO 2 MILITARY MEDICAL PLA.
XX
PI   Sun S, Dai J;
XX
DR   WPI; 2000-087904/08.
XX
PT   Nucleic acid vaccine for cysticercosis co-contracted by human and pig.
XX
PS   Claim 3; Page 9; 21pp; Chinese.
XX
CC   This invention describes a novel nucleic acid vaccine for preventing and
CC   curing human and pork cysticercosis. The invention involves the formation
CC   of a eukaryotic expression plasmid from fusion transcript expression unit
CC   consisting of three protective antigen genes (cC1, cC3 and cC4) of pig
CC   tenial cysticercus and coexpression unit of related cell factor gamma
CC   interferon (IFN-gamma) and pork interleukin 5 (IL-5) genes. The
CC   production and purification process of said nucleic acid vaccine is

CC   simple and convenient, the physical and chemical properties of the
CC   vaccine are stable, and the vaccine is easy to store and transport, and
CC   possesses effective immunological protective function for human and pig
CC   cysticercosis. This sequence represents the pig IL-5 gene used in the
CC   method of the invention
XX
SQ   Sequence 838 BP; 280 A; 148 C; 171 G; 239 T; 0 U; 0 Other;

Query Match   8.7%;   Score 30; DB 3; Length 838;
Best Local Similarity   100.0%; Pred. No. 5.2e-05;
Matches   30; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   210 AAACTTGTCTTTAATAAAAGAACACATAGA 239
                ||||||||||||||||||||||||||||||
Db   311 AAACTTGTCTTTAATAAAAGAACACATAGA 340

RESULT 13
ID   ABX75427 standard; DNA; 26 BP.
XX
AC   ABX75427;
XX
DT   25-MAR-2003 (first entry)
XX
DE   Human interleukin 5 forward RT-PCR primer.
XX
KW   CNS; conserved non-coding region; ss; cytokine; interleukin 4; IL-4;
KW   interleukin 5; IL-5; interleukin 13; IL-13; chromosome 5q31; LCR;
KW   locus control region; interleukin gene cluster; transcription factor;
KW   transgenic; PCR; primer; RT-PCR; reverse transcriptase PCR; human.
XX
OS   Homo sapiens.
XX
PN   US200213290-A1.
XX
PD   19-SEP-2002.
XX
PF   20-FEB-2001; 2001US-00789529.
XX
PR   18-FEB-2000; 2000US-0185657P.
XX
PA   (FRAZ/) FRAZER K A.
PA   (RUBI/) RUBIN E M.
PA   (LOOT/) LOOTS G G.
XX
PI   Frazer KA, Rubin EM, Loots GG;
XX
DR   WPI; 2003-165733/16.
XX
PT   Novel isolated nucleic acids which are locus control region elements in
PT   interleukin gene cluster region of chromosome, referred as conserved non-
PT   coding sequences, useful for modulating expression of cytokine genes.
XX
PS   Example 4; Page 23; 48pp; English.
XX
CC   The invention relates to an isolated nucleic acid molecule comprising a
CC   length of about 100 nucleotides of less, which has a sequence at least
CC   about 70% identical to the human conserved non-coding sequence (CNS)-1
CC   sequence (a locus control region (LCR) element in interleukin gene
CC   cluster region of chromosome 5q31 containing interleukin (IL) 4, IL5 and
CC   IL-13). Optionally, the nucleic acid has 70% identity to a human CNS-2 to
CC   CNS-16 or mouse CNS-1 to CNS-16 or their complements. Also included are:
CC   (1) an expression cassette comprising a CNS-1 sequence operably linked to
CC   a promoter which controls transcription of a heterologous coding sequence
CC   ; (2) an expression cassette consisting essentially of an IL-4 gene, an
CC   IL-13 gene and a CNS-1 sequence; (3) an expression cassette comprising an
CC   IL-4 gene, an IL-13 gene, and a CNS-1 sequence flanked between two
CC   recombination site sequences; (4) an expression cassette comprising an IL
CC   -4 gene and an IL-13 gene and lacking a CNS-1 sequence; (5) a T cell
CC   comprising one of the expression cassettes; (6) a non-human transgenic
CC   animal comprising one of the expression cassettes or the T-cell; and (7)
CC   a non-human transgenic animal where a CNS-1 sequence is deleted from its

CC   chromosome. The T cell is useful for identifying a compound that
CC   modulates binding of a transcription factor to a CNS-1 sequence which
CC   involves contacting the compound with the T cell and determining the
CC   functional effect of the compound on binding of the transcription factor
CC   to the CNS-1 sequence. The compound is an antisense sequence of the CNS
CC   sequence, an antibody against the transcription factor or a small
CC   compound. The nucleic acid is useful for modulating expression of 1 or
CC   more cytokine genes and has a diagnostic tool to screen patients having
CC   disease related to cytokine gene expression. The expression cassette is
CC   useful for identifying compounds that modulate function of CNS sequence
CC   is on cytokine gene expression. Expression cassettes with and without CNS
CC   -1 are useful for making two lines of non-human transgenic animals that
CC   are identical except one line has the CNS-1 sequence and the other line
CC   lacks the CNS-1 sequence. The transgenic animals are useful as in vivo
CC   models for various therapeutic modalities. The present sequence is a
CC   reverse transcriptase (RT)-PCR primer used to monitor the effects of CNS-
CC   1 on cytokine expression in a transgenic mouse strain which has the gene
CC   cluster from chromosome 5q31 with and without CNS-1
XX
SQ   Sequence 26 BP; 12 A; 6 C; 3 G; 5 T; 0 U; 0 Other;

Query Match   6.1%;   Score 21; DB 8; Length 26;
Best Local Similarity   100.0%; Pred. No. 2.2;
Matches   21; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   113 ATAAAAAATCACCAACTGTGCA 133
                |||||||||||||||||||||||
Db   1 ATAAAAAATCACCAACTGTGCA 21

RESULT 14
ID   AAZ55591 standard; DNA; 36 BP.
XX
AC   AAZ55591;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine IL-5 sense PCR primer, SEQ ID NO:137.
XX
KW   Interleukin; IL-4; IL-5; IL-13; Flt-3 ligand; CD40; CD40 ligand; CD154;
KW   interferon-alpha; IFN-alpha; GMCSF; antibody; canine; feline;
KW   granulocyte macrophage colony-stimulating factor; inhibitor;
KW   immune response; immunoregulation; tumour; cancer; autoimmune disease;
KW   vaccine; PCR; primer; ss.
XX
OS   Synthetic.
OS   Canis familiaris.
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
PF   28-MAY-1999; 99WO-US011942.
XX
PR   29-MAY-1998; 98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
DR   WPI; 2000-072623/06.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Example 5B; Page 107; 264pp; English.
XX
CC   The invention relates to canine interleukin-4 (IL-4), canine or feline
CC   Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,

```
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory fragments (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting. Sequences AAZ55491-Z55498, AAZ55513-Z55515 and AAZ55581-
CC   Z55608 represent PCR primers used in isolation, amplification and cloning
CC   of cDNAs encoding the immunoregulatory proteins of the invention
XX
SQ   Sequence 36 BP; 12 A; 6 C; 10 G; 8 T; 0 U; 0 Other;

Query Match             6.1%;  Score 21;  DB 3;  Length 36;
Best Local Similarity   100.0%;  Pred. No. 2.3;
Matches   21;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy    1 TTTGCTGTAGAAAAATCCCATG 21
         ||||||||||||||||||||||
Db   16 TTTGCTGTAGAAAAATCCCATG 36


RESULT 15
AAN91647
ID   AAN91647 standard; DNA; 370 BP.
XX
AC   AAN91647;
XX
DT   25-MAR-2003 (revised)
DT   21-MAR-1990 (first entry)
XX
DE   Synthetic interleukin-5 gene.
XX
KW   Growth factor.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   CDS             14..352
FT                   /*tag= a
XX
PN   GB2217328-A.
XX
PD   25-OCT-1989.
XX
PF   12-APR-1988;   88GB-00008524.
XX
PR   12-APR-1988;   88GB-00008524.
XX
PA   (BRBI-) BRITISH BIO-TECHN L.
XX
PI   Edwards RM;
XX
DR   WPI; 1989-311767/43.
DR   P-PSDB; AAP93152.
XX
PT   Synthetic gene encoding human interleukin-5 - has restriction sites at
PT   frequent intervals to facilitate manipulation.
XX
PS   Claim 1; Fig 3a; 21pp; English.
XX
CC   Has sites for HindII, BspMI, NcoI, SpeI, BspMII, ApaLI, XmnI, XhoI ClaI,
CC   BalI, PstI, DraIII, BamHI and EcoRI. IL5 acts as a B cell growth and
CC   differentiation factor. (Updated on 25-MAR-2003 to correct PA field.)
XX
SQ   Sequence 370 BP; 126 A; 73 C; 82 G; 89 T; 0 U; 0 Other;

Query Match             6.1%;  Score 21;  DB 1;  Length 370;
Best Local Similarity   100.0%;  Pred. No. 2.4;
```

```
Matches   21;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy   113 ATAAAAATCACCAACTGTGCA 133
          |||||||||||||||||||||
Db   120 ATAAAAATCACCAACTGTGCA 140

Search completed: August  8, 2005, 16:37:40
Job time : 232.259 secs
```

OM nucleic - nucleic search, using sw model

GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

Run on: August 8, 2005, 01:09:58 ; Search time 70.2587 Seconds
(without alignments)
8034.812 Million cell updates/sec

Title: US-10-787-382-9
Perfect score: 345
Sequence: 1 tttgctgtagaaaatcccat.............ccgagtggacaccggaaagt 345
Scoring table: OLIGO_NUC
Gapop 60.0 , Gapext 60.0

Searched: 1202784 seqs, 81818359 residues

Word size : 0

Total number of hits satisfying chosen parameters: 2405568

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database :
```
Issued_Patents_NA:*
1: /cgn2_6/ptodata/1/ina/5A_COMB.seq:*
2: /cgn2_6/ptodata/1/ina/5B_COMB.seq:*
3: /cgn2_6/ptodata/1/ina/6A_COMB.seq:*
4: /cgn2_6/ptodata/1/ina/6B_COMB.seq:*
5: /cgn2_6/ptodata/1/ina/PCTUS_COMB.seq:*
6: /cgn2_6/ptodata/1/ina/backfiles1.seq:*
```

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match Length	DB	ID	Description
1	345	100.0	345	4	US-09-322-409-85	Sequence 85, Appl
c 2	345	100.0	345	4	US-09-322-409-87	Sequence 87, Appl
c 3	345	100.0	345	4	US-09-451-527-85	Sequence 85, Appl
c 4	345	100.0	345	4	US-09-451-527-87	Sequence 87, Appl
c 5	345	100.0	402	4	US-09-322-409-83	Sequence 83, Appl
c 6	345	100.0	402	4	US-09-322-409-84	Sequence 84, Appl
c 7	345	100.0	402	4	US-09-451-527-83	Sequence 83, Appl
c 8	345	100.0	402	4	US-09-451-527-84	Sequence 84, Appl
c 9	345	100.0	610	4	US-09-322-409-80	Sequence 80, Appl
c 10	345	100.0	610	4	US-09-322-409-82	Sequence 82, Appl
c 11	345	100.0	610	4	US-09-451-527-80	Sequence 80, Appl
c 12	345	100.0	610	4	US-09-451-527-82	Sequence 82, Appl
13	336	97.4	405	4	US-09-371-615A-1	Sequence 1, Appli
14	21	6.1	36	4	US-09-322-409-137	Sequence 137, App
15	21	6.1	36	4	US-09-451-527-137	Sequence 137, App
16	21	6.1	375	4	US-09-556-818-33	Sequence 33, Appl
c 17	21	6.1	375	4	US-09-556-818-37	Sequence 37, Appl
18	21	6.1	377	3	US-09-180-864-1	Sequence 1, Appli
19	21	6.1	381	4	US-09-556-818-27	Sequence 27, Appl
20	21	6.1	393	4	US-09-556-818-31	Sequence 31, Appl
21	21	6.1	393	4	US-09-556-818-41	Sequence 41, Appl
22	21	6.1	399	4	US-09-556-818-39	Sequence 39, Appl
23	21	6.1	444	4	US-09-556-818-43	Sequence 43, Appl
24	21	6.1	816	4	US-09-079-839-2	Sequence 2, Appli
c 25	21	6.1	816	3	US-09-023-655-1236	Sequence 1236, Ap
26	19	5.5	29	5	PCT-US94-10957-16	Sequence 16, Appl
c 27	19	5.5	3230	3	US-09-280-799-78	Sequence 78, Appl
28	19	5.5	3230	6	5324640-1	Patent No. 5324640
29	19	5.5	3230	6	5324640-1	Patent No. 5324640
c 30	19	5.5	68444	3	US-09-949-016-13968	Sequence 13968, A
31	18	5.2	21	3	US-08-621-841-48	Sequence 48, Appl
32	18	5.2	32	4	US-09-322-409-138	Sequence 138, App
c 33	18	5.2	32	4	US-09-451-527-138	Sequence 138, App
c 34	18	5.2	601	4	US-09-949-016-63405	Sequence 63405, A
c 35	18	5.2	601	4	US-09-949-016-74518	Sequence 74518, A
c 36	18	5.2	601	4	US-09-949-016-74519	Sequence 74519, A
c 37	18	5.2	601	4	US-09-949-016-74520	Sequence 74520, A
38	18	5.2	782	4	US-09-270-767-15637	Sequence 15637, A
39	18	5.2	782	4	US-09-270-767-355	Sequence 355, App
40	18	5.2	10818	4	US-09-949-016-13583	Sequence 13583, A
41	18	5.2	83428	4	US-09-949-016-13610	Sequence 13610, A
42	18	5.2	92334	4	US-09-949-016-13920	Sequence 13920, A
43	18	5.2	92363	4	US-09-949-016-12146	Sequence 12146, A
44	18	5.2	94879	4	US-09-949-016-12101	Sequence 12101, A
45	18	5.2	94884	4	US-09-949-016-13393	Sequence 13393, A

ALIGNMENTS

```
RESULT 1
US-09-322-409-85

; Sequence 85, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 85
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(345)
US-09-322-409-85

Query Match             100.0%;  Score 345;  DB 4;  Length 345;
Best Local Similarity   100.0%;
Matches  345;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;
```

```
Qy      1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCACAGAGACCTTGACACTGCTCTCACT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCACAGAGACCTTGACACTGCTCTCACT 60

Qy     61 CATCGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 CATCGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAAT 120

Qy    121 CACCAACTGTGCATTAAAGAAGTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 CACCAACTGTGCATTAAAGAAGTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180

Qy    181 CACGGGGAGGGCTGTGGATTAAAACTATTCCAAAAACTTGTCTTTAATAAAGAAGAACATAGAG 240
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 CACGGGGAGGGCTGTGGATTAAAACTATTCCAAAAACTTGTCTTTAATAAAGAAGAACATAGAG 240

Qy    241 CGCCAAAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGTTCCTAGACTACCTG 300
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 CGCCAAAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGTTCCTAGACTACCTG 300
```

RESULT 2
US-09-322-409-87/c
; Patent No. 6471957
; Sequence 87, Application US/09322409
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shunin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 87
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-322-409-87

  Query Match   100.0%; Score 345; DB 4; Length 345;
  Best Local Similarity   100.0%; Pred. No. 1.2e-162;
  Matches 345; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 TTTGCTGTAGAAAAATCCCATGAATAGAACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 TTTGCTGTAGAAAAATCCCATGAATAGAACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60

Qy   61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120

Qy   121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAAGACCAAACTGCC 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAAGACCAAACTGCC 180

Qy   181 CACGGGGGAGGCTGTGGATAAACTATTCCAAAAACTTGTCTTTTAATAAAAGAGACACATAGAG 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CACGGGGGAGGCTGTGGATAAACTATTCCAAAAACTTGTCTTTTAATAAAAGAGACACATAGAG 240

Qy   241 CGCCAAAAAAAAAGGTGTGCAGGGAGGAAAGATTGGGAGAGTGGACAAGAGTTCCTAGACTACCTG 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 CGCCAAAAAAAAAGGTGTGCAGGGAGGAAAGATTGGGAGAGTGGACAAGAGTTCCTAGACTACCTG 300

Qy   301 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345
              |||||||||||||||||||||||||||||||||||||||||
Db   301 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345

RESULT 3
US-09-451-527-85
; Patent No. 6482403
; Sequence 85, Application US/09451527
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shunin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01

RESULT 4
US-09-451-527-87/c
; Patent No. 6482403
; Sequence 87, Application US/09451527
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shunin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 85
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(345)
US-09-451-527-85

  Query Match   100.0%; Score 345; DB 4; Length 345;
  Best Local Similarity   100.0%; Pred. No. 1.2e-162;
  Matches 345; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 TTTGCTGTAGAAAAATCCCATGAATAGAACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 TTTGCTGTAGAAAAATCCCATGAATAGAACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60

Qy   61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120

Qy   121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAAGACCAAACTGCC 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAAGACCAAACTGCC 180

Qy   181 CACGGGGGAGGCTGTGGATAAACTATTCCAAAAACTTGTCTTTTAATAAAAGAGACACATAGAG 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CACGGGGGAGGCTGTGGATAAACTATTCCAAAAACTTGTCTTTTAATAAAAGAGACACATAGAG 240

Qy   241 CGCCAAAAAAAAAGGTGTGCAGGGAGGAAAGATTGGGAGAGTGGACAAGAGTTCCTAGACTACCTG 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 CGCCAAAAAAAAAGGTGTGCAGGGAGGAAAGATTGGGAGAGTGGACAAGAGTTCCTAGACTACCTG 300

Qy   301 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345
              |||||||||||||||||||||||||||||||||||||||||
Db   301 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345

RESULT 5
US-09-322-409-83
Sequence 83, Application US/09322409
Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 83
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-322-409-83

Query Match   100.0%; Score 345; DB 4; Length 402;
Best Local Similarity 100.0%; Pred. No. 1.2e-162;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy     1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT   60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   345 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT  286

Qy    61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAAT  120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   285 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAAT  226

Qy   121 CACCAACTGTGCCATTAAAGAAGGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC  180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   225 CACCAACTGTGCCATTAAAGAAGGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC  166

Qy   181 CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG  240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   165 CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG  106

Qy   241 CGCCAAAAAAAAAGGTGTGCAGGAGGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   105 CGCCAAAAAAAAAGGTGTGCAGGAGGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG   46

Qy   301 CAAGTATTTCTTGGGTGTAATAAAACACCGAGTGGACACCGGAAAGT  345
         |||||||||||||||||||||||||||||||||||||||||||||||
Db    45 CAAGTATTTCTTGGGTGTAATAAAACACCGAGTGGACACCGGAAAGT    1
```

RESULT 6
US-09-322-409-84/c
Sequence 84, Application US/09322409
Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 84
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-322-409-84

Query Match   100.0%; Score 345; DB 4; Length 402;
Best Local Similarity 100.0%; Pred. No. 1.2e-162;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy     1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT   60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT  117

Qy    61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAAT  120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   118 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAAT  177

Qy   121 CACCAACTGTGCCATTAAAGAAGGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC  180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   178 CACCAACTGTGCCATTAAAGAAGGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC  237

Qy   181 CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG  240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   238 CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG  297

Qy   241 CGCCAAAAAAAAAGGTGTGCAGGAGGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   298 CGCCAAAAAAAAAAGGTGTGCAGGAGGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  357

Qy   301 CAAGTATTTCTTGGGTGTAATAAAACACCGAGTGGACACCGGAAAGT  345
         |||||||||||||||||||||||||||||||||||||||||||||||
Db   358 CAAGTATTTCTTGGGTGTAATAAAACACCGAGTGGACACCGGAAAGT  402
```

RESULT 7
US-09-451-527-83
Sequence 83, Application US/09451527
Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01

```
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 83
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-451-527-83

Query Match         100.0%;  Score 345;  DB 4;  Length 402;
Best Local Similarity  100.0%;  Pred. No. 1.2e-162;
Matches 345;  Conservative 0;  Mismatches 0;  Indels 0;  Gaps 0;

Qy     1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCCCACT 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCCCACT 117

Qy    61 CATCGAAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAT 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   118 CATCGAAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAT 177

Qy   121 CACCAAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACAATTGAAGAACACAAACTGCC 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   178 CACCAAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACAATTGAAGAACACAAACTGCC 237

Qy   181 CACGGGGAGGCTGTGGATAAACTATTCCAAAACTGTCTTTAATAAAAGAACACATAGAG 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   238 CACGGGGAGGCTGTGGATAAACTATTCCAAAACTGTCTTTAATAAAAGAACACATAGAG 297

Qy   241 CGCCAAAAAAAAGGTGTGCAGGAGAGAAAGATGGGAGAGAGTGACAAAGTTCCTAGACTACCTG 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   298 CGCCAAAAAAAAGGTGTGCAGGAGAGAAAGATGGGAGAGAGTGACAAAGTTCCTAGACTACCTG 357

Qy   301 CAAGTATTTCTTGGTTGTAATAAACACCGAGTGGGAGTGACCGGAAAGT 345
           |||||||||||||||||||||||||||||||||||||||||||||||||
Db   358 CAAGTATTTCTTGGTTGTAATAAACACCGAGTGGGAGTGACACCGGAAAGT 402
```

```
RESULT 8
US-09-451-527-84/c
; Sequence 84, Application US/09451527
; Patent No. 648203
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 84
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-451-527-84

Query Match         100.0%;  Score 345;  DB 4;  Length 402;
Best Local Similarity  100.0%;  Pred. No. 1.2e-162;
Matches 345;  Conservative 0;  Mismatches 0;  Indels 0;  Gaps 0;

Qy     1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCCCACT 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
```

```
Db   345 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCCCACT 286

Qy    61 CATCGAAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAT 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   285 CATCGAAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAT 226

Qy   121 CACCAAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACAATTGAAGAACACAAACTGCC 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   225 CACCAAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACAATTGAAGAACACAAACTGCC 166

Qy   181 CACGGGGAGGCTGTGGATAAACTATTCCAAAACTGTCTTTAATAAAAGAACACATAGAG 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   165 CACGGGGAGGCTGTGGATAAACTATTCCAAAACTGTCTTTAATAAAAGAACACATAGAG 106

Qy   241 CGCCAAAAAAAAGGTGTGCAGGAGAGAAAGATGGGAGAGAGTGACAAAGTTCCTAGACTACCTG 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   105 CGCCAAAAAAAAGGTGTGCAGGAGAGAAAGATGGGAGAGAGTGACAAAGTTCCTAGACTACCTG 46

Qy   301 CAAGTATTTCTTGGTTGTAATAAACACCGAGTGGGAGTGACCGGAAAGT 345
           |||||||||||||||||||||||||||||||||||||||||||||||||
Db    45 CAAGTATTTCTTGGTTGTAATAAACACCGAGTGGGAGTGACACCGGAAAGT 1
```

```
RESULT 9
US-09-322-409-80
; Sequence 80, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 80
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (29)..(430)
US-09-322-409-80

Query Match         100.0%;  Score 345;  DB 4;  Length 610;
Best Local Similarity  100.0%;  Pred. No. 1.2e-162;
Matches 345;  Conservative 0;  Mismatches 0;  Indels 0;  Gaps 0;

Qy     1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCCCACT 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    86 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCCCACT 145

Qy    61 CATCGAAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAT 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   146 CATCGAAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAT 205

Qy   121 CACCAAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACAATTGAAGAACACAAACTGCC 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   206 CACCAAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACAATTGAAGAACACAAACTGCC 265

Qy   181 CACGGGGAGGCTGTGGATAAACTATTCCAAAACTGTCTTTAATAAAAGAACACATAGAG 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   266 CACGGGGAGGCTGTGGATAAACTATTCCAAAACTGTCTTTAATAAAAGAACACATAGAG 325

Qy   241 CGCCAAAAAAAAGGTGTGCAGGAGAGAAAGATGGGAGAGAGTGACAAAGTTCCTAGACTACCTG 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   326 CGCCAAAAAAAAGGTGTGCAGGAGAGAAAGATGGGAGAGAGTGACAAAGTTCCTAGACTACCTG 385
```

Qy   301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
          ||||||||||||||||||||||||||||||||||||||||||||||
Db   386 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 430

RESULT 10
US-09-322-409-82/c
Sequence 82, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 82
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-322-409-82

Query Match   100.0%; Score 345; DB 4; Length 610;
Best Local Similarity   100.0%; Pred. No 1.2e-162;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 TTTGCTGTAGAAAATCCCATGAAATAGACTGGTGGTGGCAGGAGGACCTTGACACTGCTCTCCACT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   525 TTTGCTGTAGAAAATCCCATGAAATAGACTGGTGGTGGCAGGAGGACCTTGACACTGCTCTCCACT 466

Qy   61 CATCGGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   465 CATCGGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 406

Qy   121 CACCAACTGTGCCATTAAAGAAGAGTTTTTCAGGGTGTATAGACACATTGAAGAACCAAAACTGCC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   405 CACCAACTGTGCCATTAAAGAAGAGTTTTTCAGGGTGTATAGACACATTGAAGAACCAAAACTGCC 346

Qy   181 CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   345 CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 286

Qy   241 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   285 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 226

Qy   301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
          |||||||||||||||||||||||||||||||||||||||||||||
Db   225 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 181

RESULT 11
US-09-451-527-80
Sequence 80, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01

; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 80
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (29)..(430)
US-09-451-527-80

Query Match   100.0%; Score 345; DB 4; Length 610;
Best Local Similarity   100.0%; Pred. No 1.2e-162;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 TTTGCTGTAGAAAATCCCATGAAATAGACTGGTGGTGGCAGGAGGACCTTGACACTGCTCTCCACT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   86 TTTGCTGTAGAAAATCCCATGAAATAGACTGGTGGTGGCAGGAGGACCTTGACACTGCTCTCCACT 145

Qy   61 CATCGGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   146 CATCGGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 205

Qy   121 CACCAACTGTGCCATTAAAGAAGAGTTTTTCAGGGTGTATAGACACATTGAAGAACCAAAACTGCC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   206 CACCAACTGTGCCATTAAAGAAGAGTTTTTCAGGGTGTATAGACACATTGAAGAACCAAAACTGCC 265

Qy   181 CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   266 CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 325

Qy   241 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   326 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 385

Qy   301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
          |||||||||||||||||||||||||||||||||||||||||||||
Db   386 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 430

RESULT 12
US-09-451-527-82/c
Sequence 82, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 82
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-451-527-82

Query Match   100.0%; Score 345; DB 4; Length 610;
Best Local Similarity   100.0%; Pred. No 1.2e-162;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

RESULT 13

US-09-371-615A-1

```
; Sequence 1, Application US/09371615A
; Patent No. 6537781
; GENERAL INFORMATION:
;   APPLICANT: IDEXX LABORATORIES
;   TITLE OF INVENTION: METHODS AND COMPOSITIONS CONCERNING
;   TITLE OF INVENTION: CANINE INTERLEUKIN 5
;   FILE REFERENCE: 03604001700US00
;   CURRENT APPLICATION NUMBER: US/09/371,615A
;   CURRENT FILING DATE: 1999-08-10
;   NUMBER OF SEQ ID NOS: 8
;   SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 1
;   LENGTH: 405
;   TYPE: DNA
;   ORGANISM: Canis familiaris
US-09-371-615A-1

  Query Match     97.4%;  Score 336;  DB 4;  Length 405;
  Best Local Similarity   100.0%;  Pred. No. 3.8e-158;
  Matches  336;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy    1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTCGGCAGAGAGACCTTGACACTGCTCTCCACT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  525 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTCGGCAGAGAGACCTTGACACTGCTCTCCACT 466

Qy   61 CATCGAACTTGGCTGATAGGCGATGGCGATGGGAGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  465 CATCGAACTTGGCTGATAGGCGATGGCGATGGGAGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 406

Qy  121 CACCAAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACATTGAAGAACCAAACTGCC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  405 CACCAAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACATTGAAGAACCAAACTGCC 346

Qy  181 CACCGGGGAGGCTGTGGATAAACTATTCCAAAAACTTGTCTCTTTAATTAAAAGAACACATAGAG 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  345 CACCGGGGAGGCTGTGGATAAACTATTCCAAAAACTTGTCTCTTTAATTAAAAGAACACATAGAG 286

Qy  241 CGCCAAAAAAAAGTGTGCAGGAGAAAAGATGGGAGAGTGACAAAGTTCCTAGACTACCTG 300
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  285 CGCCAAAAAAAAGTGTGCAGGAGAAAAGATGGGAGAGTGACAAAGTTCCTAGACTACCTG 226

Qy  301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345
          ||||||||||||||||||||||||||||||||||||||||||||||
Db  225 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 181
```

RESULT 14

US-09-322-409-137

```
; Sequence 137, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shumin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C1
;   CURRENT APPLICATION NUMBER: US/09/322,409
;   CURRENT FILING DATE: 1999-05-28
;   EARLIER APPLICATION NUMBER: 60/087,306
;   EARLIER FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 154
;   SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 137
;   LENGTH: 36
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Synthetic
;   OTHER INFORMATION: Primer
US-09-322-409-137

  Query Match      6.1%;  Score 21;  DB 4;  Length 36;
  Best Local Similarity   100.0%;  Pred. No. 1.1;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy    1 TTTGCTGTAGAAAATCCCATG 21
          |||||||||||||||||||||
Db   16 TTTGCTGTAGAAAATCCCATG 36
```

RESULT 15

US-09-451-527-137

```
; Sequence 137, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shumin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C2
;   CURRENT APPLICATION NUMBER: US/09/451,527
;   CURRENT FILING DATE: 1999-12-01
;   EARLIER APPLICATION NUMBER: 09/322,409
;   EARLIER FILING DATE: 1999-05-28
;   EARLIER APPLICATION NUMBER: 60/087,306
;   EARLIER FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 174
;   SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 137
;   LENGTH: 36
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Synthetic
;   OTHER INFORMATION: Primer
US-09-451-527-137

  Query Match      6.1%;  Score 21;  DB 4;  Length 36;
  Best Local Similarity   100.0%;  Pred. No. 1.1;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy    1 TTTGCTGTAGAAAATCCCATG 21
          |||||||||||||||||||||
Db   16 TTTGCTGTAGAAAATCCCATG 36
```

OM nucleic - nucleic search, using sw model

GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

Run on: August 8, 2005, 05:12:23 ; Search time 283.896 Seconds
                 (without alignments)
                 7877.554 Million cell updates/sec

Title: US-10-787-382-9
Perfect score: 345
Sequence: 1 ttgctgtagaaatcccat.............ccgagtggacaccggaaagt 345

Scoring table: OLIGO_NUC
                 Gapop 60.0 , Gapext 60.0
Searched: 7297361 seqs, 3241162794 residues

Word size :   0
Total number of hits satisfying chosen parameters: 14594722

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database :   Published Applications NA:*
1: /cgn2_6/ptodata/1/pubpna/US07_PUBCOMB.seq:*
2: /cgn2_6/ptodata/1/pubpna/US09_NEW_PUB.seq:*
3: /cgn2_6/ptodata/1/pubpna/PCT_NEW_PUB.seq:*
4: /cgn2_6/ptodata/1/pubpna/US06_NEW_PUB.seq:*
5: /cgn2_6/ptodata/1/pubpna/US06_PUBCOMB.seq:*
6: /cgn2_6/ptodata/1/pubpna/US07_NEW_PUB.seq:*
7: /cgn2_6/ptodata/1/pubpna/PCTUS_PUBCOMB.seq:*
8: /cgn2_6/ptodata/1/pubpna/US08_NEW_PUB.seq:*
9: /cgn2_6/ptodata/1/pubpna/US09A_PUBCOMB.seq:*
10: /cgn2_6/ptodata/1/pubpna/US09B_PUBCOMB.seq:*
11: /cgn2_6/ptodata/1/pubpna/US09C_PUBCOMB.seq:*
12: /cgn2_6/ptodata/1/pubpna/US09_NEW_PUB.seq:*
13: /cgn2_6/ptodata/1/pubpna/US10A_PUBCOMB.seq:*
14: /cgn2_6/ptodata/1/pubpna/US10B_PUBCOMB.seq:*
15: /cgn2_6/ptodata/1/pubpna/US10C_PUBCOMB.seq:*
16: /cgn2_6/ptodata/1/pubpna/US10D_PUBCOMB.seq:*
17: /cgn2_6/ptodata/1/pubpna/US10F_PUBCOMB.seq:*
18: /cgn2_6/ptodata/1/pubpna/US10G_PUBCOMB.seq:*
19: /cgn2_6/ptodata/1/pubpna/US10H_PUBCOMB.seq:*
20: /cgn2_6/ptodata/1/pubpna/US10I_PUBCOMB.seq:*
21: /cgn2_6/ptodata/1/pubpna/US10J_PUBCOMB.seq:*
22: /cgn2_6/ptodata/1/pubpna/US10_NEW_PUB.seq:*
23: /cgn2_6/ptodata/1/pubpna/US60_NEW_PUB.seq:*
24: /cgn2_6/ptodata/1/pubpna/US11_NEW_PUB.seq:*
25: /cgn2_6/ptodata/1/pubpna/US11A_PUBCOMB.seq:*
26: /cgn2_6/ptodata/1/pubpna/US60_PUBCOMB.seq:*

                        SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	345	100.0	345	9	US-09-755-633-9	Sequence 9, Appli
2	345	100.0	345	11	US-09-755-633-11	Sequence 11, Appli
3	345	100.0	345	14	US-10-218-654-85	Sequence 85, Appl
4	345	100.0	345	15	US-10-218-654-87	Sequence 87, Appl
5	345	100.0	345	15	US-10-262-439-85	Sequence 85, Appl
6	345	100.0	345	15	US-10-262-439-87	Sequence 87, Appl
7	345	100.0	345	19	US-10-787-382-9	Sequence 9, Appli

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

RESULT 1
US-09-755-633-9
; Sequence 9, Application US/09755633
; Patent No. US20020127200A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/09/755,633
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 9
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(345)
US-09-755-633-9

Query Match   100.0%; Score 345; DB 9; Length 345;
Best Local Similarity   100.0%; Pred. No. 2.9e-172;

                        ALIGNMENTS

c	8	345	100.0	345	19	US-10-787-382-11	Sequence 11, Appl
c	9	345	100.0	402	9	US-09-755-633-7	Sequence 7, Appli
c	10	345	100.0	402	9	US-09-755-633-8	Sequence 8, Appli
c	11	345	100.0	402	14	US-10-218-654-83	Sequence 83, Appl
c	12	345	100.0	402	14	US-10-218-654-84	Sequence 84, Appl
c	13	345	100.0	402	15	US-10-262-439-83	Sequence 83, Appl
c	14	345	100.0	402	15	US-10-262-439-84	Sequence 84, Appl
c	15	345	100.0	402	19	US-10-787-382-7	Sequence 7, Appli
c	16	345	100.0	402	19	US-10-787-382-8	Sequence 8, Appli
c	17	345	100.0	402	19	US-10-787-382-4	Sequence 4, Appli
c	18	345	100.0	610	9	US-09-755-633-6	Sequence 6, Appli
c	19	345	100.0	610	14	US-10-218-654-80	Sequence 80, Appl
c	20	345	100.0	610	14	US-10-218-654-82	Sequence 82, Appl
c	21	345	100.0	610	15	US-10-262-439-80	Sequence 80, Appl
c	22	345	100.0	610	15	US-10-262-439-82	Sequence 82, Appl
c	23	345	100.0	610	19	US-10-787-382-6	Sequence 6, Appli
c	24	345	100.0	610	19	US-10-787-382-21	Sequence 21, Appl
c	25	259	75.1	671	9	US-09-755-633-21	Sequence 21, Appl
c	26	259	75.1	671	19	US-10-787-382-18	Sequence 18, Appl
c	27	129	37.4	1658	9	US-09-755-633-19	Sequence 19, Appl
c	28	129	37.4	1658	19	US-10-787-382-19	Sequence 19, Appl
c	29	129	37.4	1658	9	US-09-789-529-81	Sequence 81, Appl
c	30	26	6.1	26	9	US-10-787-382-12	Sequence 12, Appl
	31	21	6.1	36	9	US-09-755-633-12	Sequence 12, Appli
	32	21	6.1	36	19	US-10-191-997-90	Sequence 90, Appl
	33	21	6.1	36	19	US-10-880-101A-85	Sequence 85, Appl
	34	21	6.1	36	14	US-10-641-643-1236	Sequence 1236, Ap
	35	21	6.1	459	22	US-10-262-439-137	Sequence 137, App
	36	21	6.1	816	15	US-10-218-654-137	Sequence 137, App
	37	21	6.1	816	17	US-10-880-101A-85	Sequence 85, Appl
	38	21	6.1	816	18	US-10-787-382-12	Sequence 12, Appl
	39	21	6.1	816	21	US-10-929-182-4	Sequence 4, Appli
	40	21	6.1	816	22	US-10-295-074-8	Sequence 8, Appli
	41	21	6.1	858	16	US-10-880-101A-87	Sequence 87, Appli
	42	21	6.1	858	16	US-10-295-074-10	Sequence 10, Appl
	43	21	6.1	858	20	US-10-846-911-8	Sequence 8, Appli
	44	21	6.1	858	20	US-10-846-911-10	Sequence 10, Appl
	45	21	6.1	864	16	US-10-295-074-12	Sequence 12, Appli

Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1 TTTGCTGTAGAAAAATCCCATGAAATAGACTGGTCGGCAGAGACCTTGACACTGCTCTCCACT 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 TTTGCTGTAGAAAAATCCCATGAAATAGACTGGTCGGCAGAGACCTTGACACTGCTCTCCACT 60

Qy   61 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120

Qy  121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180

Qy  181 CACCGGGGAGGCTGTGGATAAACTATTCCAAAAACTGTCTTTAATAAAAGAACACATAGAG 240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 CACCGGGGAGGCTGTGGATAAACTATTCCAAAAACTGTCTTTAATAAAAGAACACATAGAG 240

Qy  241 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGGAGTGACAAAGTTCCTAGACTACCTG 300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGGAGTGACAAAGTTCCTAGACTACCTG 300

Qy  301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345
        |||||||||||||||||||||||||||||||||||||||||||||||
Db  301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345
```

RESULT 2
US-09-755-633-11/c
; Sequence 11, Application US/09755633
; Patent No. US20020127200A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McColl, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: 09/755,633
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: Patentin Ver. 2.1
; SEQ ID NO 11
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-755-633-11

Query Match 100.0%; Score 345; DB 9; Length 345;
Best Local Similarity 100.0%; Pred. No. 2.9e-172;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1 TTTGCTGTAGAAAAATCCCATGAAATAGACTGGTCGGCAGAGACCTTGACACTGCTCTCCACT 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 TTTGCTGTAGAAAAATCCCATGAAATAGACTGGTCGGCAGAGACCTTGACACTGCTCTCCACT 60

Qy   61 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120

Qy  121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180

Qy  181 CACCGGGGAGGCTGTGGATAAACTATTCCAAAAACTGTCTTTAATAAAAGAACACATAGAG 240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 CACCGGGGAGGCTGTGGATAAACTATTCCAAAAACTGTCTTTAATAAAAGAACACATAGAG 240

Qy  241 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGGAGTGACAAAGTTCCTAGACTACCTG 300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGGAGTGACAAAGTTCCTAGACTACCTG 300

Qy  301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345
        |||||||||||||||||||||||||||||||||||||||||||||||
Db  301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345
```

```
Db  105 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGGAGTGACAAAGTTCCTAGACTACCTG 46
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Qy  301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345
        |||||||||||||||||||||||||||||||||||||||||||||||
Db   45 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGGACACCGGAAAGT 1
```

RESULT 3
US-10-218-654-85
; Sequence 85, Application US/10218654
; Publication No. US20030099609A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; APPLICANT: Sim, Gek-Kee
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/10/218,654
; CURRENT FILING DATE: 2002-08-13
; PRIOR APPLICATION NUMBER: US/09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 85
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(345)
US-10-218-654-85

Query Match 100.0%; Score 345; DB 14; Length 345;
Best Local Similarity 100.0%; Pred. No. 2.9e-172;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1 TTTGCTGTAGAAAAATCCCATGAAATAGACTGGTCGGCAGAGACCTTGACACTGCTCTCCACT 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 TTTGCTGTAGAAAAATCCCATGAAATAGACTGGTCGGCAGAGACCTTGACACTGCTCTCCACT 60

Qy   61 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120

Qy  121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180

Qy  181 CACCGGGGAGGCTGTGGATAAACTATTCCAAAAACTGTCTTTAATAAAAGAACACATAGAG 240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 CACCGGGGAGGCTGTGGATAAACTATTCCAAAAACTGTCTTTAATAAAAGAACACATAGAG 240

Qy  241 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGGAGTGACAAAGTTCCTAGACTACCTG 300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGGAGTGACAAAGTTCCTAGACTACCTG 300

Qy  301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345
        |||||||||||||||||||||||||||||||||||||||||||||||
Db  301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345
```

RESULT 4
US-10-218-654-87/c
; Sequence 87, Application US/10218654
; Publication No. US20030099609A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin

```
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/10/218,654
; CURRENT FILING DATE: 2002-08-13
; PRIOR APPLICATION NUMBER: US/09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 87
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-218-654-87

Query Match         100.0%;  Score 345;  DB 14;  Length 345;
Best Local Similarity   100.0%;  Pred. No. 2.9e-172;
Matches 345;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy     1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT  60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   345 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT 286

Qy    61 CATCGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCCTGAAAATAAAAT 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   285 CATCGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCCTGAAAATAAAAT 226

Qy   121 CACCAACTGTGCCATTAAAGAGAGTTTTTCAGGGTATAGACAACATTGAAGAACCAAAACTGCC 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   225 CACCAACTGTGCCATTAAAGAGAGTTTTTCAGGGTATAGACAACATTGAAGAACCAAAACTGCC 166

Qy   181 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   165 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 106

Qy   241 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   105 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  46

Qy   301 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345
           |||||||||||||||||||||||||||||||||||||||||||||||
Db    45 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGGACACCGGAAAGT  1
```

```
RESULT 5
US-10-262-439-85
; Sequence 85, Application US/10262439
; Publication No. US20030143196A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/10/262,439
; CURRENT FILING DATE: 2002-09-30
; PRIOR APPLICATION NUMBER: US/09/451,527
; PRIOR FILING DATE: 1999-12-01
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 85
; LENGTH: 345
; TYPE: DNA
```

```
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(345)
US-10-262-439-85

Query Match         100.0%;  Score 345;  DB 15;  Length 345;
Best Local Similarity   100.0%;  Pred. No. 2.9e-172;
Matches 345;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy     1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT  60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT  60

Qy    61 CATCGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCCTGAAAATAAAAT 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    61 CATCGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCCTGAAAATAAAAT 120

Qy   121 CACCAACTGTGCCATTAAAGAGAGTTTTTCAGGGTATAGACAACATTGAAGAACCAAAACTGCC 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CACCAACTGTGCCATTAAAGAGAGTTTTTCAGGGTATAGACAACATTGAAGAACCAAAACTGCC 180

Qy   181 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240

Qy   241 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300

Qy   301 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345
           |||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345
```

```
RESULT 6
US-10-262-439-87/c
; Sequence 87, Application US/10262439
; Publication No. US20030143196A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/10/262,439
; CURRENT FILING DATE: 2002-09-30
; PRIOR APPLICATION NUMBER: US/09/451,527
; PRIOR FILING DATE: 1999-12-01
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 87
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-262-439-87

Query Match         100.0%;  Score 345;  DB 15;  Length 345;
Best Local Similarity   100.0%;  Pred. No. 2.9e-172;
Matches 345;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy     1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT  60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT  60

Qy    61 CATCGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCCTGAAAATAAAAT 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    61 CATCGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCCTGAAAATAAAAT 120
```

```
Db  285  CATCGAACTTGGCTGATAGGGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAT  226
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Qy  121  CATCGAACTTGGCTGATAGGGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAT  180

Qy  121  CACCAAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC  180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  225  CACCAAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC  166

Qy  181  CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG  240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  165  CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG  106

Qy  241  CGCCAAAAAAAAAAGGTGTGCAGGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  105  CGCCAAAAAAAAAAGGTGTGCAGGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  46

Qy  301  CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT  345
         ||||||||||||||||||||||||||||||||||||||||||||||
Db  45   CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT  1
```

RESULT 7
US-10-787-382-9
; Sequence 9, Application US/10787382
; Publication No. US20040191868A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/10/787,382
; CURRENT FILING DATE: 2004-02-24
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: Patentin Ver. 2.1
; SEQ ID NO 9
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(345)
US-10-787-382-9

Query Match   100.0%; Score 345; DB 19; Length 345;
Best Local Similarity 100.0%; Pred. No. 2.9e-172;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy  1    TTTGCTGTAGAAAATCCCATGAATAGACTGGTGCGAGAGACCTGACACTGCTCTCCACT  60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  1    TTTGCTGTAGAAAATCCCATGAATAGACTGGTGCGAGAGACCTGACACTGCTCTCCACT  60

Qy  61   CATCGAACTTGGCTGATAGGGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAT  120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  61   CATCGAACTTGGCTGATAGGGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAT  120

Qy  121  CACCAAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC  180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121  CACCAAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC  180

Qy  181  CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG  240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181  CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG  240

Qy  241  CGCCAAAAAAAAAAGGTGTGCAGGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241  CGCCAAAAAAAAAAGGTGTGCAGGAGAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  300

Qy  301  CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT  345
         ||||||||||||||||||||||||||||||||||||||||||||||
Db  301  CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT  345
```

RESULT 8
US-10-787-382-11/c
; Sequence 11, Application US/10787382
; Publication No. US20040191868A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/10/787,382
; CURRENT FILING DATE: 2004-02-24
; PRIOR APPLICATION NUMBER: US/09/755,633
; PRIOR FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: Patentin Ver. 2.1
; SEQ ID NO 11
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-787-382-11

Query Match   100.0%; Score 345; DB 19; Length 345;
Best Local Similarity 100.0%; Pred. No. 2.9e-172;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy  1    TTTGCTGTAGAAAATCCCATGAATAGACTGGTGCGAGAGACCTGACACTGCTCTCCACT  60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  1    TTTGCTGTAGAAAATCCCATGAATAGACTGGTGCGAGAGACCTGACACTGCTCTCCACT  60

Qy  61   CATCGAACTTGGCTGATAGGGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAT  120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  61   CATCGAACTTGGCTGATAGGGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAT  120

Qy  121  CACCAAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC  180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121  CACCAAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC  180

Qy  181  CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG  240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181  CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG  240

Qy  225  CACCAAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC  166
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  285  CATCGAACTTGGCTGATAGGGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAT  226

Qy  105  CGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  46
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301  CGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  345

Qy  45   CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT  1
         ||||||||||||||||||||||||||||||||||||||||||||||
Db  301  CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT  345
```

RESULT 9
US-09-755-633-7
; Sequence 7, Application US/09755633
; Patent No. US20020127200A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/09/755,633

; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: Patentin Ver. 2.1
;
; SEQ ID NO 7
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-755-633-7

Query Match   100.0%; Score 345; DB 9; Length 402;
Best Local Similarity 100.0%; Pred. No. 3e-172;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT 60
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT 60

Qy   58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCCAGAGACCTTGACACTGCTCTCCACT 117
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCCAGAGACCTTGACACTGCTCTCCACT 117

Qy  118 CATCGAACTTGGCTGATAGGCGATGGGAACCTGGTGGCCAGAGACCTTGACACTGCTCTCCACT 177
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  118 CATCGAACTTGGCTGATAGGCGATGGGAACCTGGTGGCCAGAGACCTTGACACTGCTCTCCACT 177

Qy   61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGGTGGCCAGAGACCTTGACACTGCTCTCCACT 120
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGGTGGCCAGAGACCTTGACACTGCTCTCCACT 120

Qy  181 CACGGGGGAGGCGTGGATAAACTATTCCAAAACTGTTGTCTTTAATAAAAGGACACATAGAG 240
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 CACGGGGGAGGCGTGGATAAACTATTCCAAAACTGTTGTCTTTAATAAAAGGACACATAGAG 240

Qy  178 CACCAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGAGACACATTGAGAGAACCAAACTGCC 237
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  178 CACCAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGAGACACATTGAGAGAACCAAACTGCC 237

Qy  121 CACCAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGAGACACATTGAGAGAACCAAACTGCC 180
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 CACCAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGAGACACATTGAGAGAACCAAACTGCC 180

Qy  238 CACGGGGGAGGCGTGGATAAACTATTCCAAAACTGTTGTCTTTAATAAAAGGAACACATAGAG 297
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  238 CACGGGGGAGGCGTGGATAAACTATTCCAAAACTGTTGTCTTTAATAAAAGGAACACATAGAG 297

Qy  301 CGCCAAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGTGACAAAAGTTCCTAGACTACCTG 300
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301 CGCCAAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGTGACAAAAGTTCCTAGACTACCTG 357

Qy  241 CGCCAAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGTGACAAAAGTTCCTAGACTACCTG 300
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  358 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402

Qy  358 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
        |||||||||||||||||||||||||||||
Db  358 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
```

RESULT 10
US-09-755-633-8/c
; Sequence 8, Application US/0975633
; Patent No. US20020127200A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/09/755,633
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: Patentin Ver. 2.1
;
; SEQ ID NO 8
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-755-633-8

Query Match   100.0%; Score 345; DB 9; Length 402;
Best Local Similarity 100.0%; Pred. No. 3e-172;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT 60
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT 60
```

RESULT 11
US-10-218-654-83
; Sequence 83, Application US/10218654
; Publication No. US20030099609A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/10/218,654
; CURRENT FILING DATE: 2002-08-13
; PRIOR APPLICATION NUMBER: US/09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 83
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-218-654-83

Query Match   100.0%; Score 345; DB 14; Length 402;
Best Local Similarity 100.0%; Pred. No. 3e-172;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT 60
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   45 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 1

Qy   61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGGTGGCCAGAGACCTTGACACTGCTCTCCACT 117
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  105 CGCCAAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGTGACAAAAGTTCCTAGACTACCTG 46

Qy  118 CATCGAACTTGGCTGATAGGCGATGGGAACCTGGTGGCCAGAGACCTTGACACTGCTCTCCACT 177
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  165 CACGGGGGAGGCGTGGATAAACTATTCCAAAACTGTTGTCTTTAATAAAAGGAACACATAGAG 106

Qy  121 CACCAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGAGACACATTGAGAGAACCAAACTGCC 180
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  225 CACCAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGAGACACATTGAGAGAACCAAACTGCC 166

Qy  181 CACGGGGGAGGCGTGGATAAACTATTCCAAAACTGTTGTCTTTAATAAAAGGAACACATAGAG 240
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  285 CATCGAACTTGGCTGATAGGCGATGGGAACCTGGTGGCCAGAGACCTTGACACTGCTCTCCACT 226

Qy  241 CGCCAAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGTGACAAAAGTTCCTAGACTACCTG 300
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  345 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT 286

Qy  301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
        |||||||||||||||||||||||||||||
Db  345 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT 286
```

Qy   301 CAAGTATTTCTTGGTGTTAATAAACACCGAGTGGACACCGGAAAGT 345
           ||||||||||||||||||||||||||||||||||||||||||||||
Db   358 CAAGTATTTCTTGGTGTTAATAAACACCGAGTGGACACCGGAAAGT 402

RESULT 12
US-10-218-654-84/c
; Sequence 84, Application US/10218654
; Publication No. US20030096009A1
; GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shumin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C1
;   CURRENT APPLICATION NUMBER: US/10/218,654
;   CURRENT FILING DATE: 2002-08-13
;   PRIOR APPLICATION NUMBER: US/09/322,409
;   PRIOR FILING DATE: 1999-05-28
;   PRIOR APPLICATION NUMBER: 60/087,306
;   PRIOR FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 154
;   SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 84
;   LENGTH: 402
;   TYPE: DNA
;   ORGANISM: Canis familiaris
US-10-218-654-84

  Query Match   100.0%; Score 345; DB 14; Length 402;
  Best Local Similarity   100.0%;
  Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 TTTGCTGTAGAAAAATCCCATGAATAGAACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT 60
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   345 TTTGCTGTAGAAAAATCCCATGAATAGAACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT 286

Qy   61 CATCGAACTTGGCTGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCCTGAAAATAAAAAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   285 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCCTGAAAATAAAAAT 226

Qy   121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   225 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 166

Qy   181 CACGGGGGAGGCTGTGGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACAATAGAG 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   165 CACGGGGGAGGCTGTGGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACAATAGAG 106

Qy   241 CGCCAAAAAAAAAAGGTTGTGCAGGAGGAGAAAGATGGAGTGACAAAGTTCCTAGACTACCTG 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   105 CGCCAAAAAAAAAAGGTTGTGCAGGAGGAGAAAGATGGAGTGACAAAGTTCCTAGACTACCTG 46

Qy   301 CAAGTATTTCTTGGTGTTAATAAACACCGAGTGGACACCGGAAAGT 345
          |||||||||||||||||||||||||||||||||||||||||||||
Db   45 CAAGTATTTCTTGGTGTTAATAAACACCGAGTGGACACCGGAAAGT 1

RESULT 13
US-10-262-439-83
; Sequence 83, Application US/10262439
; Publication No. US20030143196A1
; GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shumin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C2
;   CURRENT APPLICATION NUMBER: US/10/262,439

;   CURRENT FILING DATE: 2002-09-30
;   PRIOR APPLICATION NUMBER: US/09/451,527
;   PRIOR FILING DATE: 1999-12-01
;   PRIOR APPLICATION NUMBER: 09/322,409
;   PRIOR FILING DATE: 1999-05-28
;   PRIOR APPLICATION NUMBER: 60/087,306
;   PRIOR FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 174
;   SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 83
;   LENGTH: 402
;   TYPE: DNA
;   ORGANISM: Canis familiaris
US-10-262-439-83

  Query Match   100.0%; Score 345; DB 15; Length 402;
  Best Local Similarity   100.0%;
  Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 TTTGCTGTAGAAAAATCCCATGAATAGAACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT 60
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   58 TTTGCTGTAGAAAAATCCCATGAATAGAACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT 117

Qy   61 CATCGAACTTGGCTGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCCTGAAAATAAAAAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   118 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCCTGAAAATAAAAAT 177

Qy   121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   178 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 237

Qy   181 CACGGGGGAGGCTGTGGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACAATAGAG 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   238 CACGGGGGAGGCTGTGGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACAATAGAG 297

Qy   241 CGCCAAAAAAAAAAGGTTGTGCAGGAGGAGAAAGATGGAGTGACAAAGTTCCTAGACTACCTG 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   298 CGCCAAAAAAAAAAGGTTGTGCAGGAGGAGAAAGATGGAGTGACAAAGTTCCTAGACTACCTG 357

Qy   301 CAAGTATTTCTTGGTGTTAATAAACACCGAGTGGACACCGGAAAGT 345
          |||||||||||||||||||||||||||||||||||||||||||||
Db   358 CAAGTATTTCTTGGTGTTAATAAACACCGAGTGGACACCGGAAAGT 402

RESULT 14
US-10-262-439-84/c
; Sequence 84, Application US/10262439
; Publication No. US20030143196A1
; GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shumin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C2
;   CURRENT APPLICATION NUMBER: US/10/262,439
;   CURRENT FILING DATE: 2002-09-30
;   PRIOR APPLICATION NUMBER: US/09/451,527
;   PRIOR FILING DATE: 1999-12-01
;   PRIOR APPLICATION NUMBER: 09/322,409
;   PRIOR FILING DATE: 1999-05-28
;   PRIOR APPLICATION NUMBER: 60/087,306
;   PRIOR FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 174
;   SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 84
;   LENGTH: 402
;   TYPE: DNA
;   ORGANISM: Canis familiaris
US-10-262-439-84

  Query Match   100.0%; Score 345; DB 15; Length 402;

```
Best Local Similarity  100.0%;  Pred. No. 3e-172;
Matches 345; Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy      1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    345 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 286

Qy     61 CATCGAAACTTGGCTGATAGGCGGCAAGGGAACCTGATCAGTTCCTTCTGAAAATAAAAAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    285 CATCGAAACTTGGCTGATAGGCGGGAATGGGAACCTGATCAGTTCCTTCTGAAAATAAAAAT 226

Qy    121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    225 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 166

Qy    181 CACGGGGGAGGCTGTGGAATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    165 CACGGGGGAGGCTGTGGAATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 106

Qy    241 CGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    105 CGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 46

Qy    301 CAAGTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCGGAAAGT 345
          |||||||||||||||||||||||||||||||||||||||||||||||
Db     45 CAAGTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCGGAAAGT 1
```

```
RESULT 15
US-10-787-382-7
; Sequence 7, Application US/10787382
; Publication No. US20040191868A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/10/787,382
; CURRENT FILING DATE: 2004-02-24
; PRIOR APPLICATION NUMBER: US/09/755,633
; PRIOR FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: Patentin Ver. 2.1
; SEQ ID NO 7
;  LENGTH: 402
;  TYPE: DNA
;  ORGANISM: Canis familiaris

US-10-787-382-7

Query Match             100.0%;  Score 345;  DB 19;  Length 402;
Best Local Similarity   100.0%;  Pred. No. 3e-172;
Matches 345;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy      1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 117

Qy     61 CATCGAAACTTGGCTGATAGGCGGCAAGGGAACCTGATCAGTTCCTTCTGAAAATAAAAAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    118 CATCGAAACTTGGCTGATAGGCGGGAATGGGAACCTGATCAGTTCCTTCTGAAAATAAAAAT 177

Qy    121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    178 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 237

Qy    181 CACGGGGGAGGCTGTGGAATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    238 CACGGGGGAGGCTGTGGAATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 297

Qy    241 CGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    298 CGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 357

Qy    301 CAAGTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCGGAAAGT 345
          |||||||||||||||||||||||||||||||||||||||||||||||
Db    358 CAAGTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCGGAAAGT 402
```

```
Search completed: August  8, 2005, 14:25:04
Job time : 283.896 secs
```

THIS PAGE BLANK (USPTO)

OM nucleic - nucleic search, using sw model

Copyright (c) 1993 - 2005 Compugen Ltd.

GenCore version 5.1.6

Run on: August 8, 2005, 13:43:44 ; Search time 1464.68 Seconds
8965.920 Million cell updates/sec

Title: US-10-787-382-9
Perfect score: 345
Sequence: 1 tttgtctgtagaaatccat..........ccgagtggacaccggaagt 345
Scoring table: OLIGO_NUC
Gapop 60.0 , Gapext 60.0
Gapop 60.0 , Gapext 60.0
Searched: 34239544 seqs, 19032134700 residues
Word size : 0

Total number of hits satisfying chosen parameters: 68479088

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries
Database : EST:*

```
1: gb_est1:*
2: gb_est2:*
3: gb_htc:*
4: gb_est3:*
5: gb_est4:*
6: gb_est5:*
7: gb_est6:*
8: gb_gss1:*
9: gb_gss2:*
```

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	129	37.4	622	9	CE331159	CE331159 tigr-gss-
2	21	6.1	405	9	AY412020	AY412020 Homo sapi
3	21	6.1	456	3	BC066281	BC066281 Homo sapi
4	21	6.1	456	6	CD559532	CD559532 AGENCOURT
5	21	6.1	456	6	CD559686	CD559686 AGENCOURT
6	21	6.1	458	3	BC066279	BC066279 Homo sapi
7	21	6.1	458	6	BC066280	BC066280 Homo sapi
8	21	6.1	463	6	CD559535	CD559535 AGENCOURT
9	21	6.1	467	6	CD559688	CD559688 AGENCOURT
10	21	6.1	467	6	CD559690	CD559690 AGENCOURT
11	21	6.1	470	6	CD559687	CD559687 AGENCOURT
12	21	6.1	473	6	CD559689	CD559689 AGENCOURT
13	21	6.1	477	6	CD559608	CD559608 AGENCOURT
14	21	6.1	478	6	CD559534	CD559534 AGENCOURT
15	21	6.1	489	6	CD559536	CD559536 AGENCOURT
16	21	6.1	492	6	CD559533	CD559533 AGENCOURT
17	21	6.1	817	3	BC069137	BC069137 Homo sapi
18	20	5.8	305	1	AI666365	AI666365 mu12c07.x
19	19	5.8	340	1	AI666525	AI666525 mu22f12.x
20	20	5.8	378	8	AQ134641	AQ134641 HS_3055_B
21	20	5.8	431	1	AA200961	AA200961 mil2c07.r
22	20	5.8	490	7	CN448219	CN448219 GUO_cDNA_
23	20	5.8	522	5	BX514766	BX514766
24	20	5.8	528	8	AQ677395	AQ677395 HS_5526_A
c 25	20	5.8	557	8	AZ266075	AZ266075 RPCI-23-1
c 26	20	5.8	576	1	AI645939	AI645939 mu12c07.y
c 27	20	5.8	620	9	CL385238	CL385238 RPCI44_33
c 28	20	5.8	683	9	AG148772	AG148772 Pan trog1
c 29	20	5.8	700	7	CN447619	CN447619 GUO_cDNA_
c 30	20	5.8	802	9	CC922148	CC922148 t03a16ba
c 31	20	5.8	1013	9	CNS03COM	CNS03COM Tetraodon
c 32	20	5.8	1063	8	AZ205009	AZ205009 SP_0099_A
c 33	19	5.5	218	8	CC115803	CC115803 NDL_68JB_
c 34	19	5.5	293	1	AV258645	AV258645 AV258645
c 35	19	5.5	308	4	BG811718	BG811718 daf35h02.
c 36	19	5.5	357	9	CG683296	CG683296 ZMBBc015
c 37	19	5.5	376	2	BF428261	BF428261 da06h03.
c 38	19	5.5	389	8	AQ462483	AQ462483 HS_5213_A
c 39	19	5.5	406	9	AY412021	AY412021 Pan trog1
c 40	19	5.5	406	6	CB807383	CB807383 AMGNNUC:C
c 41	19	5.5	511	6	CD986398	CD986398 QAN21d02.
c 42	19	5.5	538	6	CD562324	CD562324 HS_5229_B
c 43	19	5.5	544	9	AQ562285	AQ562285 CH240-4A2
c 44	19	5.5	548	8	CC763285	CC763285 RPCI-23-1
c 45	19	5.5	573	8	AQ735965	AQ735965 HS_2261_A

ALIGNMENTS

RESULT 1
LOCUS   CE331159   622 bp   DNA   linear   GSS 26-SEP-2003
DEFINITION tigr-gss-dog-17000333986568 Dog Library Canis familiaris genomic,
            genomic survey sequence.
ACCESSION   CE331159
VERSION   CE331159.1 GI:36147469
KEYWORDS   GSS.
SOURCE   Canis familiaris (dog)
ORGANISM   Canis familiaris
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1 (bases 1 to 622)
AUTHORS   Kirkness,E.F., Bafna,V., Halpern,A.L., Levy,S., Remington,K.,
            Rusch,D.B., Delcher,A.L., Pop,M., Wang,W., Fraser,C.M. and
            Venter,J.C.
TITLE   The dog genome: survey sequencing and comparative analysis
JOURNAL   Science 301 (5641), 1898-1903 (2003)
MEDLINE   22875432
PUBMED   14512627
COMMENT   Contact: Kirkness EF
            The Institute for Genomic Research
            Department of Eukaryotic Genomics, TIGR, 9712 Medical Center Drive,
            Rockville, MD 20850, USA
            Tel: 301-838-0200
            Fax: 301-838-0208
            Email: ekirkness@tigr.org
            Class: shotgun.
FEATURES   Location/Qualifiers
     source   1..622
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
                     /strain="Standard Poodle"
                     /db_xref="taxon:9615"
                     /clone_lib="Dog Library"
                     /note="Site 1: BstXI; Libraries were prepared from
                     peripheral blood"
ORIGIN

Query Match   37.4%; Score 129; DB 9; Length 622;
Best Local Similarity   100.0%; Pred. 1.2e-56;
Matches 129; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   121 CACCAACTGTGCATTAAAGAAGTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   42 CACCAACTGTGCATTAAAGAAGTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 101

```
Qy    181 CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    102 CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 161

Qy    241 CGCCAAAAA 249
          |||||||||
Db    162 CGCCAAAAA 170
```

RESULT 2
AY412020
LOCUS   AY412020   405 bp   DNA   linear   GSS 16-DEC-2003
DEFINITION   Homo sapiens IL5 gene, VIRTUAL TRANSCRIPT, partial sequence,
               genomic survey sequence.
ACCESSION   AY412020
VERSION   AY412020.1 GI:39767985
KEYWORDS   GSS.
SOURCE   Homo sapiens (human)
  ORGANISM   Homo sapiens
               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
               Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 405)
  AUTHORS   Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
               Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
               Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
               Adams,M.D. and Cargill,M.
  TITLE   Inferring nonneutral evolution from human-chimp-mouse orthologous
               gene trios
  JOURNAL   Science 302 (5652), 1960-1963 (2003)
  PUBMED   14671302
REFERENCE   2 (bases 1 to 405)
  AUTHORS   Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
               Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
               Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
               Adams,M.D. and Cargill,M.
  TITLE   Direct Submission
  JOURNAL   Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive,
               Rockville, MD 20850, USA
COMMENT   This sequence was made by sequencing genomic exons and ordering
               them based on alignment.
FEATURES   Location/Qualifiers
     source   1..405
                     /organism="Homo sapiens"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9606"
     gene   <1..>405
                     /gene="IL5"
                     /locus_tag="HCM4418"

Qy   113 ATAAAAATCACCAACTGTGCA 133
          |||||||||||||||||||||
Db   170 ATAAAAATCACCAACTGTGCA 190

RESULT 3
BC066281
Query Match   6.1%;   Score 21;   DB 9;   Length 405;
Best Local Similarity 100.0%;   Pred. No. 13;
Matches 21;   Conservative 0;   Mismatches 0;   Indels 0;   Gaps 0;
ORIGIN

LOCUS   BC066281   456 bp   mRNA   linear   HTC 12-FEB-2004
DEFINITION   Homo sapiens cDNA clone IMAGE:6971770, containing frame-shift
               errors.
ACCESSION   BC066281
VERSION   BC066281.1 GI:4290069
KEYWORDS   HTC.
SOURCE   Homo sapiens (human)
  ORGANISM   Homo sapiens
               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
               Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 456)
  AUTHORS   Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
               Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
               Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
               Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
               Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
               Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
               Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
               Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
               Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
               McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
               Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
               Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
               Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodrigues,S.,
               Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
               Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
               Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
               Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
               Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
  TITLE   Generation and initial analysis of more than 15,000 full-length
               human and mouse cDNA sequences
  JOURNAL   Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
  PUBMED   12477932
REFERENCE   2 (bases 1 to 456)
  AUTHORS   Strausberg,R.
  TITLE   Direct Submission
  JOURNAL   Submitted (03-FEB-2004) National Institutes of Health, Mammalian
               Gene Collection (MGC), Cancer Genomics Office, National Cancer
               Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
               USA
REMARK   NIH-MGC Project URL: http://mgc.nci.nih.gov
COMMENT   Contact: MGC help desk
               Email: cgapbe-r@mail.nih.gov
               Tissue Procurement: Narayan Bhat
               cDNA Library Preparation: Bhat Laboratory
               cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
               DNA Sequencing by: Sequencing Group at the Stanford Human Genome
               Center, Stanford University School of Medicine, Stanford, CA 94305
               Web site: http://www-shgc.stanford.edu
               Contact: (dickson, Mark) mcd@paxil.stanford.edu
               Dickson, M., Schmutz, J., Grimwood, J., Rodriguez, A. and Myers,
               R. M.
               Clone distribution: MGC clone distribution information can be found
               through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
               Series: IRAK Plate: 172 Row: a Column: 17
               This clone was selected for full length sequencing because it
               passed the following selection criteria: matched mRNA gi: 28559032
               This clone has the following problem: frame shifted.
FEATURES   Location/Qualifiers
     source   1..456
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971770"
                     /tissue_type="PCR rescued clones"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH10B"
                     /note="vector: pDNR-Dual"
ORIGIN

Qy   113 ATAAAAATCACCAACTGTGCA 133
          |||||||||||||||||||||
Db   193 ATAAAAATCACCAACTGTGCA 213

RESULT 4
CD559532
Query Match   6.1%;   Score 21;   DB 3;   Length 456;
Best Local Similarity 100.0%;   Pred. No. 13;
Matches 21;   Conservative 0;   Mismatches 0;   Indels 0;   Gaps 0;

LOCUS   CD559532   456 bp   mRNA   linear   EST 11-JUN-2003
DEFINITION   AGENCOURT_14497057 NIH_MGC_195 Homo sapiens cDNA clone
               IMAGE:6971772 5', mRNA sequence.
```

ACCESSION   CD559532
VERSION   CD559532.1 GI:31585600
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 456)
AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL   Unpublished (1999)
COMMENT   Contact: Daniela S. Gerhard, Ph.D.
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
            National Cancer Institute / NIH
            Office of Cancer Genomics
            National Institutes of Health
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBKi row: g column: 11
            High quality sequence stop: 456.
FEATURES   Location/Qualifiers
     source   1..456
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971772"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cell lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presV.dat
                     a Note: this is a NIH_MGC Library."
ORIGIN

Query Match   6.1%; Score 21; DB 6; Length 456;
Best Local Similarity   100.0%;
Matches 21; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   113 ATAAAAATCACCAACTGTGCA 133
               ||||||||||||||||||||||
Db   191 ATAAAAATCACCAACTGTGCA 211

RESULT 5
LOCUS   CD559686/c
DEFINITION AGENCOURT 14497093 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971772 3', mRNA sequence.
ACCESSION   CD559686
VERSION   CD559686.1 GI:31585754
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

LOCUS   CD559686   456 bp   mRNA   linear   EST 11-JUN-2003

REFERENCE   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL   Unpublished (1999)
COMMENT   Contact: Daniela S. Gerhard, Ph.D.
            National Cancer Institute / NIH
            Office of Cancer Genomics
            National Institutes of Health
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBKi row: g column: 11
            High quality sequence stop: 456.
FEATURES   Location/Qualifiers
     source   1..456
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971772"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cell lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presV.dat
                     a Note: this is a NIH_MGC Library."
ORIGIN

Query Match   6.1%; Score 21; DB 6; Length 456;
Best Local Similarity   100.0%;
Matches 21; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   113 ATAAAAATCACCAACTGTGCA 133
               ||||||||||||||||||||||
Db   264 ATAAAAATCACCAACTGTGCA 244

RESULT 6
LOCUS   BC066279
DEFINITION Homo sapiens cDNA clone IMAGE:6971768, containing frame-shift
            errors.
ACCESSION   BC066279
VERSION   BC066279.1 GI:42490901
KEYWORDS   HTC.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 458)
AUTHORS   Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
            Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
            Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
            Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,

LOCUS   BC066279   458 bp   mRNA   linear   HTC 12-FEB-2004

RESULT 7

```
LOCUS       BC066280     458 bp     mRNA    linear   HTC 12-FEB-2004
DEFINITION  Homo sapiens cDNA clone IMAGE:6971769, containing frame-shift
            errors.
ACCESSION   BC066280
VERSION     BC066280.1  GI:42490838
KEYWORDS    HTC.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 458)
  AUTHORS   Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
            Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
            Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
            Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
            Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
            Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
            Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
            Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
            Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
            McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
            Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
            Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
            Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodriguez,S.,
            Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
            Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
            Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
            Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
            Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
  TITLE     Generation and initial analysis of more than 15,000 full-length
            human and mouse cDNA sequences
  JOURNAL   Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
  PUBMED    12477932
REFERENCE   2  (bases 1 to 458)
  AUTHORS   Strausberg,R.
  TITLE     Direct Submission
  JOURNAL   Submitted (03-FEB-2004) National Institutes of Health, Mammalian
            Gene Collection (MGC), Cancer Genomics Office, National Cancer
            Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
            USA
  REMARK    NIH-MGC Project URL: http://mgc.nci.nih.gov
COMMENT     Contact: MGC help desk
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Sequencing Group at the Stanford Human Genome
            Center, Stanford University School of Medicine, Stanford, CA 94305
            Web site: http://www-shgc.stanford.edu
            Contact: (Dickson, Mark) mcd@paxil.stanford.edu
            Dickson, M., Schmutz, J., Grimwood, J., Rodriguez, A., and Myers,
            R. M.
            Clone distribution: MGC clone distribution information can be found
            through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
            Series: IRAK Plate: 172 Row: a Column: 16
            This clone was selected for full length sequencing because it
            passed the following selection criteria: matched mRNA gi: 28559032
            This clone has the following problem: frame shifted.
FEATURES             Location/Qualifiers
     source          1..458
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971769"
                     /tissue_type="PCR rescued clones"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH10B"
                     /note="Vector: pDNR-Dual"
ORIGIN

Query Match     6.1%;  Score 21;  DB 3;  Length 458;
Best Local Similarity   100.0%;
Matches   21;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy  113 ATAAAAATCACCAACTGTGCA 133
        |||||||||||||||||||||
Db  193 ATAAAAATCACCAACTGTGCA 213
```

RSULT 7

```
LOCUS       BC066280     458 bp     mRNA    linear   HTC 12-FEB-2004
DEFINITION  Homo sapiens cDNA clone IMAGE:6971769, containing frame-shift
            errors.
ACCESSION   BC066280
VERSION     BC066280.1  GI:42490838
KEYWORDS    HTC.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 458)
  AUTHORS   Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
            Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
            Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
            Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
            Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
            Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
            Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
            Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
            Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
            McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
            Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
            Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
            Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodriguez,S.,
            Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
            Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
            Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
            Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
            Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
  TITLE     Generation and initial analysis of more than 15,000 full-length
            human and mouse cDNA sequences
  JOURNAL   Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
  PUBMED    12477932
REFERENCE   2  (bases 1 to 458)
  AUTHORS   Strausberg,R.
  TITLE     Direct Submission
  JOURNAL   Submitted (03-FEB-2004) National Institutes of Health, Mammalian
            Gene Collection (MGC), Cancer Genomics Office, National Cancer
            Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
            USA
  REMARK    NIH-MGC Project URL: http://mgc.nci.nih.gov
COMMENT     Contact: MGC help desk
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Sequencing Group at the Stanford Human Genome
            Center, Stanford University School of Medicine, Stanford, CA 94305
            Web site: http://www-shgc.stanford.edu
            Contact: (Dickson, Mark) mcd@paxil.stanford.edu
            Dickson, M., Schmutz, J., Grimwood, J., Rodriguez, A., and Myers,
            R. M.
            Clone distribution: MGC clone distribution information can be found
            through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
            Series: IRAK Plate: 172 Row: a Column: 15
            This clone was selected for full length sequencing because it
            passed the following selection criteria: matched mRNA gi: 28559032
            This clone has the following problem: frame shifted.
FEATURES             Location/Qualifiers
     source          1..458
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971768"
                     /tissue_type="PCR rescued clones"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH10B"
                     /note="Vector: pDNR-Dual"
ORIGIN

Query Match     6.1%;  Score 21;  DB 3;  Length 458;
Best Local Similarity   100.0%;
Matches   21;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy  113 ATAAAAATCACCAACTGTGCA 133
        |||||||||||||||||||||
Db  193 ATAAAAATCACCAACTGTGCA 213
```

RESULT 8
```
LOCUS       CD559535              463 bp    mRNA    linear   EST 26-NOV-2003
DEFINITION  AGENCOURT 14496865 NIH_MGC 195 Homo sapiens cDNA clone
            IMAGE:6971769 5', mRNA sequence.
ACCESSION   CD559535
VERSION     CD559535.2  GI:38558950
KEYWORDS    EST.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 463)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE     National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT     On Jun 10, 2003 this sequence version replaced gi:31585603.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBK1 row: g  column: 08
            High quality sequence stop: 463.
FEATURES             Location/Qualifiers
     source          1..463
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971769"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC 195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSv.dat
                     a Note: this is a NIH_MGC Library."
ORIGIN

Qy        113 ATAAAAATCACCAACTGTGCA 133
              |||||||||||||||||||||
Db        197 ATAAAAATCACCAACTGTGCA 217

Query Match      6.1%;  Score 21;  DB 6;  Length 463;
Best Local Similarity  100.0%;
Matches  21;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;
```

RESULT 9
```
LOCUS       CD559688              467 bp    mRNA    linear   EST 19-NOV-2003
DEFINITION  AGENCOURT 14496964 NIH_MGC 195 Homo sapiens cDNA clone
            IMAGE:6971770 5', mRNA sequence.
ACCESSION   CD559688
VERSION     CD559688.2  GI:38453486
KEYWORDS    EST.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 467)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE     National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT     On Jun 10, 2003 this sequence version replaced gi:31585756.
            Contact: Daniela S Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBK1 row: g  column: 09
            High quality sequence start: 11
            High quality sequence stop: 467.
FEATURES             Location/Qualifiers
     source          1..467
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971770"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC 195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSv.dat
                     a Note: this is a NIH_MGC Library."
ORIGIN

Qy        113 ATAAAAATCACCAACTGTGCA 133
              |||||||||||||||||||||
Db        274 ATAAAAATCACCAACTGTGCA 254

Query Match      6.1%;  Score 21;  DB 6;  Length 467;
Best Local Similarity  100.0%;
Matches  21;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;
```

RESULT 10
```
LOCUS       CD559690              467 bp    mRNA    linear   EST 19-NOV-2003
DEFINITION  AGENCOURT 14496838 NIH_MGC 195 Homo sapiens cDNA clone
            IMAGE:6971768 5', mRNA sequence.
ACCESSION   CD559690
VERSION     CD559690.2  GI:38453490
KEYWORDS    EST.
```

SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 467)
AUTHORS   NIH-MGC http://mgc.nci.nih.gov/, Mammalian Gene Collection (MGC)
TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585758.
            Contact: Daniela S. Gerhard, Ph.D.
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBKi row: g column: 07
            High quality sequence stop: 467.
FEATURES   Location/Qualifiers
     source   1..467
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971768"
                     /tissue_type="mixed"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSv.dat
                     a Note: this is a NIH_MGC Library."

ORIGIN

Qy   113 ATAAAAATCACCAACTGTGCA 133
                |||||||||||||||||||||
Db   274 ATAAAAATCACCAACTGTGCA 254

Query Match   6.1%;   Score 21; DB 6; Length 467;
Best Local Similarity   100.0%;   Pred. No. 13;
Matches   21; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

RESULT 11
LOCUS   CD559687/c
DEFINITION AGENCOURT 14497029 NIH_MGC 195 Homo sapiens cDNA clone
            IMAGE:6971771 5', mRNA sequence.
ACCESSION   CD559687
VERSION   CD559687.2 GI:38453484
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 470)

AUTHORS   NIH-MGC http://mgc.nci.nih.gov/, Mammalian Gene Collection (MGC)
TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585755.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBKi row: g column: 10
            High quality sequence start: 14
            High quality sequence stop: 470.
FEATURES   Location/Qualifiers
     source   1..470
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971771"
                     /tissue_type="mixed"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSv.dat
                     a Note: this is a NIH_MGC Library."

ORIGIN

Qy   113 ATAAAAATCACCAACTGTGCA 133
                |||||||||||||||||||||
Db   277 ATAAAAATCACCAACTGTGCA 257

Query Match   6.1%;   Score 21; DB 6; Length 470;
Best Local Similarity   100.0%;   Pred. No. 13;
Matches   21; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

RESULT 12
LOCUS   CD559689/c
DEFINITION AGENCOURT 14496901 NIH_MGC 195 Homo sapiens cDNA clone
            IMAGE:6971769 5', mRNA sequence.
ACCESSION   CD559689
VERSION   CD559689.2 GI:38453487
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 473)
AUTHORS   NIH-MGC http://mgc.nci.nih.gov/, Mammalian Gene Collection (MGC)
TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585757.

RESULT 13
CD559608
LOCUS   CD559608   477 bp   mRNA   linear   EST 26-NOV-2003
DEFINITION   AGENCOURT_14496997 NIH_MGC_195 Homo sapiens cDNA clone
             IMAGE:6971867 5', mRNA sequence.
ACCESSION   CD559608
VERSION   CD559608.2 GI:38558942
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 477)
AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585676.
             Contact: Daniela S. Gerhard, Ph.D.
             Office of Cancer Genomics
             National Cancer Institute / NIH
             Bldg. 31 Rm10A07 Bethesda, MD 20892

             Tissue Procurement: Narayan Bhat
             cDNA Library Preparation: Bhat Laboratory
             cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
             DNA Sequencing by: Agencourt Bioscience Corporation
             Clone distribution: MGC clone distribution information can be
             found through the I.M.A.G.E. Consortium/LLNL at:
             http://image.llnl.gov
             Plate: IRBKI row: g column: 08
             High quality sequence start: 16
             High quality sequence stop: 473.
FEATURES   Location/Qualifiers
     source 1..473
             /organism="Homo sapiens"
             /mol_type="mRNA"
             /db_xref="taxon:9606"
             /clone="IMAGE:6971769"
             /tissue_type="mixed"
             /lab_host="DH5A (T1 phage-resistant)"
             /clone_lib="NIH_MGC_195"
             /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
             loxP-HindIII; Clones from this library have been
             PCR-amplified using gene-specific primers to contain the
             complete open reading frame (based on known gene sequences
             available from NCBI's RefSeq). Template for PCR is cDNA
             derived from either pooled cytoplasmic polyA RNA from 30
             cells lines or pooled total RNA from 10 different tissues
             (from BD Biosciences/Clontech and Washington University).
             PCR products are directionally cloned into the loxP sites
             of the pDNR-Dual vector. Library constructed by Dr.
             Narayan Bhat, Earl Bere III and Hongling Liao (Gene
             Expression Laboratory, Research Technology Program, SAIC
             Frederick, NCI-Frederick, Frederick, MD 21702). For
             information on which gene each clone represents, please
             visit our anonymous ftp site at
             ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presV.dat
             a Note: this is a NIH_MGC Library."
ORIGIN

Qy   113 ATAAAAATCACCAACTGTGCA 133
             ||||||||||||||||||||||
Db   280 ATAAAAATCACCAACTGTGCA 260

Query Match   6.1%;   Score 21;   DB 6;   Length 473;
Best Local Similarity 100.0%;   Pred. No. 13;
Matches 21;   Conservative 0;   Mismatches 0;   Indels 0;   Gaps 0;

RESULT 14
CD559534
LOCUS   CD559534   478 bp   mRNA   linear   EST 26-NOV-2003
DEFINITION   AGENCOURT_14496928 NIH_MGC_195 Homo sapiens cDNA clone
             IMAGE:6971770 5', mRNA sequence.
ACCESSION   CD559534
VERSION   CD559534.2 GI:38558949
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 478)
AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585602.
             Contact: Daniela S. Gerhard, Ph.D.
             Office of Cancer Genomics
             National Cancer Institute / NIH
             Bldg. 31 Rm10A07 Bethesda, MD 20892
             Tissue Procurement: Narayan Bhat
             cDNA Library Preparation: Bhat Laboratory
             cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Narayan Bhat
cDNA Library Preparation: Bhat Laboratory
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Agencourt Bioscience Corporation
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: IRBK2 row: g column: 10
High quality sequence start: 107
High quality sequence stop: 353.
FEATURES   Location/Qualifiers
     source 1..477
             /organism="Homo sapiens"
             /mol_type="mRNA"
             /db_xref="taxon:9606"
             /clone="IMAGE:6971867"
             /tissue_type="mixed"
             /lab_host="DH5A (T1 phage-resistant)"
             /clone_lib="NIH_MGC_195"
             /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
             loxP-HindIII; Clones from this library have been
             PCR-amplified using gene-specific primers to contain the
             complete open reading frame (based on known gene sequences
             available from NCBI's RefSeq). Template for PCR is cDNA
             derived from either pooled cytoplasmic polyA RNA from 30
             cells lines or pooled total RNA from 10 different tissues
             (from BD Biosciences/Clontech and Washington University).
             PCR products are directionally cloned into the loxP sites
             of the pDNR-Dual vector. Library constructed by Dr.
             Narayan Bhat, Earl Bere III and Hongling Liao (Gene
             Expression Laboratory, Research Technology Program, SAIC
             Frederick, NCI-Frederick, Frederick, MD 21702). For
             information on which gene each clone represents, please
             visit our anonymous ftp site at
             ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presV.dat
             a Note: this is a NIH_MGC Library."
ORIGIN

Qy   113 ATAAAAATCACCAACTGTGCA 133
             ||||||||||||||||||||||
Db   210 ATAAAAATCACCAACTGTGCA 230

Query Match   6.1%;   Score 21;   DB 6;   Length 477;
Best Local Similarity 100.0%;   Pred. No. 13;
Matches 21;   Conservative 0;   Mismatches 0;   Indels 0;   Gaps 0;

```
          DNA Sequencing by: Agencourt Bioscience Corporation
          Clone distribution: MGC clone distribution information can be
          found through the I.M.A.G.E. Consortium/LLNL at:
          http://image.llnl.gov

          Plate: IRBK1  row: g  column: 09
          High quality sequence start: 3
          High quality sequence stop: 478.

FEATURES             Location/Qualifiers
     source          1..478
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /tissue_type="mixed"
                     /clone="IMAGE:6971770"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presv.dat
                     a Note: this is a NIH_MGC Library."
ORIGIN

Qy   113 ATAAAAATCACCAACTGTGCA 133
         |||||||||||||||||||||
Db   214 ATAAAAATCACCAACTGTGCA 234

Query Match        6.1%;   Score 21;   DB 6;   Length 478;
Best Local Similarity   100.0%;
Matches   21;   Conservative  0;   Mismatches  0;   Indels  0;   Gaps  0;
```

```
RESULT 15
CD559536

LOCUS       CD559536              489 bp    mRNA    linear   EST 26-NOV-2003
DEFINITION  AGENCOURT_14496804 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971768 5', mRNA sequence.
ACCESSION   CD559536
VERSION     CD559536.2  GI:38558953
KEYWORDS    EST.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 489)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE     National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT     On Jun 10, 2003 this sequence version replaced gi:31585604.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
```

```
          Plate: IRBK1  row: g  column: 07
          High quality sequence start: 17
          High quality sequence stop: 489.

FEATURES             Location/Qualifiers
     source          1..489
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /tissue_type="mixed"
                     /clone="IMAGE:6971768"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presv.dat
                     a Note: this is a NIH_MGC Library."
ORIGIN

Qy   113 ATAAAAATCACCAACTGTGCA 133
         |||||||||||||||||||||
Db   223 ATAAAAATCACCAACTGTGCA 243

Query Match        6.1%;   Score 21;   DB 6;   Length 489;
Best Local Similarity   100.0%;
Matches   21;   Conservative  0;   Mismatches  0;   Indels  0;   Gaps  0;

Search completed: August  9, 2005, 00:13:23
Job time : 1468.68 secs
```

OM nucleic - nucleic search, using sw model

Copyright (c) 1993 - 2005 Compugen Ltd.

GenCore version 5.1.6

Run on: August 7, 2005, 08:50:30 ; Search time 70.2587 Seconds
(without alignments)
8034.812 Million cell updates/sec

Title: US-10-787-382-9
Perfect score: 345
Sequence: 1 tttgctgtagaaatcccat.........ccgagtggaccaccggaagt 345

Scoring table: IDENTITY NUC
Gapop 10.0 , Gapext 1.0

Searched: 1202784 seqs, 818138359 residues

Total number of hits satisfying chosen parameters: 2405568

Maximum DB seq length: 200000000
Minimum DB seq length: 0

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :   Issued_Patents NA:*
1: /cgn2_6/ptodata/1/ina/5A_COMB.seq:*
2: /cgn2_6/ptodata/1/ina/5B_COMB.seq:*
3: /cgn2_6/ptodata/1/ina/6A_COMB.seq:*
4: /cgn2_6/ptodata/1/ina/6B_COMB.seq:*
5: /cgn2_6/ptodata/1/ina/PcTUS_COMB.seq:*
6: /cgn2_6/ptodata/1/ina/backfiles1.seq:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	345	100.0	345	4	US-09-322-409-85	Sequence 85, Appl
2	345	100.0	345	4	US-09-322-409-87	Sequence 87, Appl
3	345	100.0	345	4	US-09-451-527-85	Sequence 85, Appl
4	345	100.0	345	4	US-09-451-527-87	Sequence 87, Appl
5	345	100.0	345	4	US-09-322-409-83	Sequence 83, Appl
6	345	100.0	402	4	US-09-322-409-84	Sequence 84, Appl
7	345	100.0	402	4	US-09-451-527-83	Sequence 83, Appl
8	345	100.0	402	4	US-09-451-527-84	Sequence 84, Appl
9	345	100.0	610	4	US-09-322-409-80	Sequence 80, Appl
c 10	345	100.0	610	4	US-09-322-409-82	Sequence 82, Appl
c 11	345	100.0	610	4	US-09-451-527-80	Sequence 80, Appl
c 12	345	100.0	610	4	US-09-451-527-82	Sequence 82, Appl
13	341.8	99.1	405	4	US-09-371-615A-1	Sequence 1, Appli
14	231.4	67.1	816	3	US-09-079-839-2	Sequence 2, Appli
15	229.8	66.6	816	3	US-09-023-655-1236	Sequence 1236, Ap
16	206	59.7	377	3	US-09-180-864-1	Sequence 1, Appli
17	196.4	56.9	1534	3	US-08-629-643A-4	Sequence 4, Appli
18	196.4	56.9	1534	3	US-09-155-884-4	Sequence 4, Appli
19	178.4	51.7	375	4	US-09-556-818-33	Sequence 33, Appl
20	175.6	50.9	357	4	US-09-556-818-35	Sequence 35, Appl
21	169.2	49.0	381	4	US-09-556-818-27	Sequence 27, Appl
22	166.4	48.2	399	4	US-09-556-818-39	Sequence 39, Appl
23	166	48.1	444	4	US-09-556-818-43	Sequence 43, Appl
24	165.6	48.0	375	4	US-09-556-818-37	Sequence 37, Appl
25	161.6	46.8	393	4	US-09-556-818-41	Sequence 41, Appl
26	160.4	46.5	393	4	US-09-556-818-31	Sequence 31, Appl
27	159.2	46.1	375	4	US-09-556-818-29	Sequence 29, Appl
28	148.4	43.0	351	4	US-09-556-818-51	Sequence 51, Appl
29	145	42.0	393	4	US-09-556-818-55	Sequence 55, Appl
30	144.8	42.0	375	4	US-09-556-818-45	Sequence 45, Appl
31	144.8	42.0	438	4	US-09-556-818-59	Sequence 59, Appl
32	141.8	41.1	387	4	US-09-556-818-57	Sequence 57, Appl
33	140.8	40.8	369	4	US-09-556-818-53	Sequence 53, Appl
34	125.6	36.4	369	4	US-09-556-818-47	Sequence 47, Appl
35	123.6	35.8	387	4	US-09-556-818-49	Sequence 49, Appl
36	90.6	26.3	6727	3	US-08-629-643A-5	Sequence 5, Appli
37	90.6	26.3	6727	3	US-09-155-884-5	Sequence 5, Appli
c 38	90.6	26.3	6727	3	US-09-280-799-1	Sequence 1, Appli
39	90.2	26.1	3230	3	US-09-280-799-78	Sequence 78, Appl
40	90.2	26.1	3230	1	US-09-280-463-14	Patent No. 5324640
41	90.2	26.1	7218	1	US-09-232-463-14	Patent No. 5324640
c 42	38	11.0	6837	2	US-09-573-080A-37	Patent No. 5324640-1
43	35	10.1	50563	4	US-09-949-016-15821	Sequence 15821, A
44	34.8	10.1	636	4	US-09-248-796A-8266	Sequence 8266, Ap
45	34.6	10.0	636	4	US-09-248-796A-8266	Sequence 8266, Ap

ALIGNMENTS

RESULT 1
US-09-322-409-85

Sequence 85, Application US/09322409
Patent No. 6471957
GENERAL INFORMATION:
APPLICANT: Sim, Gek-Kee
APPLICANT: Yang, Shumin
APPLICANT: Dreitz, Matthew J.
APPLICANT: Wonderling, Ramani S.
TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
FILE REFERENCE: IM-2-C1
CURRENT APPLICATION NUMBER: US/09/322,409
CURRENT FILING DATE: 1999-05-28
EARLIER APPLICATION NUMBER: 60/087,306
EARLIER FILING DATE: 1998-05-29
NUMBER OF SEQ ID NOS: 154
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 85
LENGTH: 345
TYPE: DNA
ORGANISM: Canis familiaris
FEATURE:
NAME/KEY: CDS
LOCATION: (1)..(345)
US-09-322-409-85

Query Match 100.0%; Score 345; DB 4; Length 345;
Best Local Similarity 100.0%; Pred. No. 8.4e-101;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 TTTGCTGTAGAAAATCCCATGAATAGAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1 TTTGCTGTAGAAAATCCCATGAATAGAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60

Qy 61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120

Qy 121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180

Qy 181 CACGGGGAGGGTGTGGATAAAACTATATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 181 CACGGGGAGGGCTGTGGATAAAACTATATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240

Qy 241 CGCCAAAAAAAAAAGGTGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 241 CGCCAAAAAAAAAAGGTGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300

Qy   301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345
             ||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345

RESULT 2
US-09-322-409-87/c
; Sequence 87, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shumin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C1
;   CURRENT APPLICATION NUMBER: US/09/322,409
;   CURRENT FILING DATE: 1999-05-28
;   EARLIER APPLICATION NUMBER: 60/087,306
;   EARLIER FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 154
;   SOFTWARE: PatentIn Ver. 2.0
;   SEQ ID NO 87
;   LENGTH: 345
;   TYPE: DNA
;   ORGANISM: Canis familiaris
US-09-322-409-87

  Query Match   100.0%; Score 345; DB 4; Length 345;
  Best Local Similarity   100.0%;
  Matches 345; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 TTTGCTGTAGAAAATCCCATGAATAGGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT 60
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 TTTGCTGTAGAAAATCCCATGAATAGGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT 60

Qy   61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120

Qy   121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180

Qy   181 CACGGGGAGGCTGTGGAATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CACGGGGAGGCTGTGGAATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240

Qy   241 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300

Qy   301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345
             ||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345

RESULT 3
US-09-451-527-85
; Sequence 85, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shumin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C2
;   CURRENT APPLICATION NUMBER: US/09/451,527
;   CURRENT FILING DATE: 1999-12-01

;   EARLIER APPLICATION NUMBER: 09/322,409
;   EARLIER FILING DATE: 1999-05-28
;   EARLIER APPLICATION NUMBER: 60/087,306
;   EARLIER FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 174
;   SOFTWARE: PatentIn Ver. 2.0
;   SEQ ID NO 85
;   LENGTH: 345
;   TYPE: DNA
;   ORGANISM: Canis familiaris
;   FEATURE:
;   NAME/KEY: CDS
;   LOCATION: (1)..(345)
US-09-451-527-85

  Query Match   100.0%; Score 345; DB 4; Length 345;
  Best Local Similarity   100.0%;
  Matches 345; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 TTTGCTGTAGAAAATCCCATGAATAGGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT 60
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 TTTGCTGTAGAAAATCCCATGAATAGGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT 60

Qy   61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120

Qy   121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180

Qy   181 CACGGGGAGGCTGTGGAATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CACGGGGAGGCTGTGGAATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240

Qy   241 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300

Qy   301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345
             ||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345

RESULT 4
US-09-451-527-87/c
; Sequence 87, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shumin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C2
;   CURRENT APPLICATION NUMBER: US/09/451,527
;   CURRENT FILING DATE: 1999-12-01
;   EARLIER APPLICATION NUMBER: 09/322,409
;   EARLIER FILING DATE: 1999-05-28
;   EARLIER APPLICATION NUMBER: 60/087,306
;   EARLIER FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 174
;   SOFTWARE: PatentIn Ver. 2.0
;   SEQ ID NO 87
;   LENGTH: 345
;   TYPE: DNA
;   ORGANISM: Canis familiaris
US-09-451-527-87

  Query Match   100.0%; Score 345; DB 4; Length 345;
  Best Local Similarity   100.0%;
  Matches 345; Conservative   0;

```
Qy     1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTTGGCGAGAGACCTTGACACTGCTCTCCACT 60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   345 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTTGGCGAGAGACCTTGACACTGCTCTCCACT 286

Qy    61 CATCGGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTGATTCCTACTCCTGAAAATAAAAAT 120
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   285 CATCGGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTGATTCCTACTCCTGAAAATAAAAAT 226

Qy   121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACAAAACTGCC 180
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   225 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACAAAACTGCC 166

Qy   181 CACGGGGGAGGCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   165 CACGGGGGAGGCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 106

Qy   241 CGCCAAAAAAAAGGTGTGCAGGAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   105 CGCCAAAAAAAAGGTGTGCAGGAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 46

Qy   301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAAGT 345
         ||||||||||||||||||||||||||||||||||||||||||||||||
Db    45 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAAGT 1
```

RESULT 5
US-09-322-409-83
Sequence 83, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 83
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-322-409-83

Query Match   100.0%; Score 345; DB 4; Length 402;
Best Local Similarity 100.0%; Pred. No. 9e-101;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy     1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTTGGCGAGAGACCTTGACACTGCTCTCCACT 60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   345 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTTGGCGAGAGACCTTGACACTGCTCTCCACT 286

Qy    61 CATCGGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTGATTCCTACTCCTGAAAATAAAAAT 120
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   285 CATCGGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTGATTCCTACTCCTGAAAATAAAAAT 226

Qy   121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACAAAACTGCC 180
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   225 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACAAAACTGCC 166

Qy   181 CACGGGGGAGGCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   165 CACGGGGGAGGCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 106

Qy   241 CGCCAAAAAAAAGGTGTGCAGGAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   105 CGCCAAAAAAAAGGTGTGCAGGAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 46

Qy   301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAAGT 345
         ||||||||||||||||||||||||||||||||||||||||||||||||
Db    45 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAAGT 1
```

RESULT 6
US-09-322-409-84/c
Sequence 84, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 84
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-322-409-84

Query Match   100.0%; Score 345; DB 4; Length 402;
Best Local Similarity 100.0%; Pred. No. 9e-101;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy     1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTTGGCGAGAGACCTTGACACTGCTCTCCACT 60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   345 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTTGGCGAGAGACCTTGACACTGCTCTCCACT 286

Qy    61 CATCGGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTGATTCCTACTCCTGAAAATAAAAAT 120
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   285 CATCGGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTGATTCCTACTCCTGAAAATAAAAAT 226

Qy   121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACAAAACTGCC 180
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   225 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACAAAACTGCC 166

Qy   181 CACGGGGGAGGCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   165 CACGGGGGAGGCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 106

Qy   241 CGCCAAAAAAAAGGTGTGCAGGAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   105 CGCCAAAAAAAAGGTGTGCAGGAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 46

Qy   301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAAGT 345
         ||||||||||||||||||||||||||||||||||||||||||||||||
Db    45 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAAGT 1

Qy   301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAAGT 345
         ||||||||||||||||||||||||||||||||||||||||||||||||
Db   358 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAAGT 402
```

RESULT 7
US-09-451-527-83
Sequence 83, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01

```
;   EARLIER APPLICATION NUMBER: 09/322,409
;   EARLIER FILING DATE: 1999-05-28
;   EARLIER APPLICATION NUMBER: 60/087,306
;   EARLIER FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 174
;   SOFTWARE: PatentIn Ver. 2.0
;
;   SEQ ID NO 83
;   LENGTH: 402
;   TYPE: DNA
;   ORGANISM: Canis familiaris
US-09-451-527-83

  Query Match             100.0%;  Score 345;  DB 4;  Length 402;
  Best Local Similarity   100.0%;  Pred. No. 9e-101;
  Matches  345;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT   60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT  117

Qy         61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAAT  120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        118 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAAT  177

Qy        121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC  180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        178 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC  237

Qy        181 CACGGGGAGGCTGTGGAATAAACTATTCCAAAAACTGTCTCTTTAATAAAAGAACACATAGAG  240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        238 CACGGGGAGGCTGTGGAATAAACTATTCCAAAAACTGTCTCTTTAATAAAAGAACACATAGAG  297

Qy        241 CGCCAAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        298 CGCCAAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  357

Qy        301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGGACACCGGAAAGT  345
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db        358 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGGACACCGGAAAGT  402


RESULT 8
US-09-451-527-84/c
;   Sequence 84, Application US/09451527
;   Patent No. 648403
;   GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shumin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;     ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C2
;   CURRENT APPLICATION NUMBER: US/09/451,527
;   CURRENT FILING DATE: 1999-12-01
;   EARLIER APPLICATION NUMBER: 09/322,409
;   EARLIER FILING DATE: 1999-05-28
;   EARLIER APPLICATION NUMBER: 60/087,306
;   EARLIER FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 174
;   SOFTWARE: PatentIn Ver. 2.0
;
;   SEQ ID NO 84
;   LENGTH: 402
;   TYPE: DNA
;   ORGANISM: Canis familiaris
US-09-451-527-84

  Query Match             100.0%;  Score 345;  DB 4;  Length 402;
  Best Local Similarity   100.0%;  Pred. No. 9e-101;
  Matches  345;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT   60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        345 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT  286

Qy         61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAAT  120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        285 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAAT  226

Qy        121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC  180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        225 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC  166

Qy        181 CACGGGGAGGCTGTGGAATAAACTATTCCAAAAACTGTCTCTTTAATAAAAGAACACATAGAG  240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        165 CACGGGGAGGCTGTGGAATAAACTATTCCAAAAACTGTCTCTTTAATAAAAGAACACATAGAG  106

Qy        241 CGCCAAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        105 CGCCAAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG   46

Qy        301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGGACACCGGAAAGT  345
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db         45 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGGACACCGGAAAGT    1


RESULT 9
US-09-322-409-80
;   Sequence 80, Application US/09322409
;   Patent No. 6471957
;   GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shumin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;     ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C1
;   CURRENT APPLICATION NUMBER: US/09/322,409
;   CURRENT FILING DATE: 1999-05-28
;   EARLIER APPLICATION NUMBER: 60/087,306
;   EARLIER FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 154
;   SOFTWARE: PatentIn Ver. 2.0
;
;   SEQ ID NO 80
;   LENGTH: 610
;   TYPE: DNA
;   ORGANISM: Canis familiaris
;   FEATURE:
;   NAME/KEY: CDS
;   LOCATION: (29)..(430)
US-09-322-409-80

  Query Match             100.0%;  Score 345;  DB 4;  Length 610;
  Best Local Similarity   100.0%;  Pred. No. 1.1e-100;
  Matches  345;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT   60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         86 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT  145

Qy         61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAAT  120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        146 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAAT  205

Qy        121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC  180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        206 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC  265

Qy        181 CACGGGGAGGCTGTGGAATAAACTATTCCAAAAACTGTCTCTTTAATAAAAGAACACATAGAG  240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        266 CACGGGGAGGCTGTGGAATAAACTATTCCAAAAACTGTCTCTTTAATAAAAGAACACATAGAG  325

Qy        241 CGCCAAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        326 CGCCAAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  385
```

Qy 301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
         |||||||||||||||||||||||||||||||||||||||||||||
Db 386 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 430

RESULT 10
US-09-322-409-82/c
; Sequence 82, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 82
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-322-409-82

Query Match   100.0%; Score 345; DB 4; Length 610;
Best Local Similarity   100.0%; Pred. No. 1.1e-100;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 TTTGCTGTAGAAAATCCCATGAAATAGACTCGTGGCAGGAGAGGACCTTGACACTCGTCTCCACT 60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 525 TTTGCTGTAGAAAATCCCATGAAATAGACTCGTGGCAGGAGAGGACCTTGACACTCGTCTCCACT 466

Qy   61 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 465 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 406

Qy 121 CACCAAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 405 CACCAAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 346

Qy 181 CACGGGGGAGGCGTGTGGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 345 CACGGGGGAGGCGTGTGGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 286

Qy 241 CGCCAAAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 285 CGCCAAAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 226

Qy 301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
         |||||||||||||||||||||||||||||||||||||||||||||
Db 225 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 181

RESULT 11
US-09-451-527-80
; Sequence 80, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01

; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 80
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (29)..(430)
US-09-451-527-80

Query Match   100.0%; Score 345; DB 4; Length 610;
Best Local Similarity   100.0%; Pred. No. 1.1e-100;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 TTTGCTGTAGAAAATCCCATGAAATAGACTCGTGGCAGGAGAGGACCTTGACACTCGTCTCCACT 60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   86 TTTGCTGTAGAAAATCCCATGAAATAGACTCGTGGCAGGAGAGGACCTTGACACTCGTCTCCACT 145

Qy   61 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 146 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 205

Qy 121 CACCAAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 206 CACCAAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 265

Qy 181 CACGGGGGAGGCGTGTGGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 266 CACGGGGGAGGCGTGTGGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 325

Qy 241 CGCCAAAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 326 CGCCAAAAAAAAAAGGTGTGCAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 385

Qy 301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
         |||||||||||||||||||||||||||||||||||||||||||||
Db 386 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 430

RESULT 12
US-09-451-527-82/c
; Sequence 82, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 82
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-451-527-82

Query Match   100.0%; Score 345; DB 4; Length 610;
Best Local Similarity   100.0%; Pred. No. 1.1e-100;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

RESULT 13
US-09-371-615A-1
; Sequence 1, Application US/0937161SA
; Patent No. 6537781
; GENERAL INFORMATION:
; APPLICANT: IDEXX LABORATORIES
; TITLE OF INVENTION: METHODS AND COMPOSITIONS CONCERNING
; TITLE OF INVENTION: CANINE INTERLEUKIN 5
; FILE REFERENCE: 03604001700US00
; CURRENT APPLICATION NUMBER: US/09/371,615A
; CURRENT FILING DATE: 1999-08-10
; NUMBER OF SEQ ID NOS: 8
; SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 1
; LENGTH: 405
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-371-615A-1

Query Match 99.1%; Score 341.8; DB 4; Length 405;
Best Local Similarity 99.4%; Pred. No. 9.7e-100;
Matches 343; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

```
Qy    1 TTTGCTGTGTAGAAAATCCATGAATACGACTGGTGTGGCAGAGACGACCTTGACACTGCTCTCCACT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  525 TTTGCTGTGTAGAAAATCCATGAATACGACTGGTGTGGCAGAGACGACCTTGACACTGCTCTCCACT 466

Qy   61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAT 120
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  465 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAT 406

Qy  121 CACCCAACTGTGTCCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  405 CACCCAACTGTGTCCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 346

Qy  181 CACCGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTCTTTAATAAAAGAACACATAGAG 240
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  345 CACCGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTCTTTAATAAAAGAACACATAGAG 286

Qy  241 CGCCAAAAAAAAAGGTGTGCAGGAGAAGAGATGGAGAGTGACAAGAGTTCCTAGACTACCTG 300
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  285 CGCCAAAAAAAAAGGTGTGCAGGAGAAGAGATGGAGAGTGACAAGAGTTCCTAGACTACCTG 226

Qy  301 CAAGTATTTCTTGGTGTTAATAAACACCGAGTGGACACCGGAAAGT 345
          ||||||||||||||||||||||||||||||||||||||||||||||
Db  225 CAAGTATTTCTTGGTGTTAATAAACACCGAGTGGACACCGGAAAGT 181
```

RESULT 14
US-09-079-839-2
; Sequence 2, Application US/09079839
; Patent No. 6048726
; GENERAL INFORMATION:
; APPLICANT: Weltman, Joel K.
; APPLICANT: Karim, Aftab S.
; TITLE OF INVENTION: INHIBITION OF EOSINOPHILIC INFLAMMATION
; FILE REFERENCE: 09998/002001
; CURRENT APPLICATION NUMBER: US/09/079,839
; CURRENT FILING DATE: 1998-05-15
; NUMBER OF SEQ ID NOS: 2
; SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 2
; LENGTH: 816
; TYPE: DNA
; ORGANISM: Homo sapiens
US-09-079-839-2

Query Match 67.1%; Score 231.4; DB 3; Length 816;
Best Local Similarity 80.4%; Pred. No. 3.7e-64;
Matches 271; Conservative 0; Mismatches 66; Indels 0; Gaps 0;

```
Qy    9 AGAAAATCCCATGAATAGACTGGTGTGGCAGAGACGACCTTGACACTGCTTCTCCACTCATCGAAC 68
          ||||| ||  || |  | ||||||  ||| |||||||||||| ||||||| ||| |||||||||||
Db  110 AGAAATTCCACACAAGTGCATTGGTGAAAAGAGACGACCTTGGCACTGCTTTCTACTCATCGAAC 169

Qy   69 TTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGTTCCGTGTACATAAAAATCACCAACT 128
          | ||||||||| | | | ||  | |||  | |||||||||| ||||| || |||||||||||||||||
Db  170 TCTGCTGATAGCCAATGAGATGAGACTCTGAGGATTCCCGTTCCGTGTACATAAAAATCACCAACT 229

Qy  129 GTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCCCACCACGGGA 188
          ||||| | |||||| |||||||| |||| |||| |||||||| ||||||| | | ||| ||
Db  230 GTGCACTGAAGAAATCTTTCAGGGAATAGGCACACTGGAGAGTCAAACTGTGTGCAAGGGGG 289

Qy  189 GGCTGTGGATAAACTATTCCAAAACTGTTCTTTAATAAAAGAAACACATAGAGCGCGCCAAAA 248
          | ||||||| | |||||| |||||| ||| |  ||||||||  ||  || |||| |||| |||
Db  290 TACTGTGGAAAGACTATTCAAAAACTTGTCCTTAATAAAATACATTGAGCGGGCCAAAA 349

Qy  249 AAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCCAAGTATT 308
          ||||| |||||  | ||||| | |||||  |  ||| ||||||||||||||| |||| ||
Db  350 AAAAAAGTGTGGAGAAAGACGGAGAAGGTAAACCAATTCCTAGACTACCTGCCAAGAGTT 409

Qy  309 TCTTGGTGTAATAAACACCCAAGTGGACACCGGAAAGT 345
          ||||||||||| |  |||| ||||||  | |  || |||
Db  410 TCTTGGTGTAATGAACACCGAGTGGGATAATAGAAAGT 446
```

RESULT 15
US-09-023-655-1236
; Sequence 1236, Application US/09023655
; Patent No. 6607879
; GENERAL INFORMATION:
; APPLICANT: Cocks, Benjamin G.
; APPLICANT: Susan G. Stuart
; APPLICANT: Jeffrey J. Seilhamer
; TITLE OF INVENTION: COMPOSITION FOR THE DETECTION OF BLOOD CELL GENE
; TITLE OF INVENTION: EXPRESSION
; NUMBER OF SEQUENCES: 1508
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: INCYTE PHARMACEUTICALS, INC.
; STREET: 3174 PORTER DRIVE
; CITY: PALO ALTO
; STATE: CALIFORNIA
; COUNTRY: USA
; ZIP: 94304
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Word Perfect 6.1 for Windows/MS-DOS 6.2
; CURRENT APPLICATION DATA:

```
~ ;
~ ;    APPLICATION NUMBER:   US/09/023,655
~ ;      FILING DATE:  HEREWITH
~ ;    CLASSIFICATION:
~ ;    PRIOR APPLICATION DATA:
~ ;      APPLICATION NUMBER:
~ ;      FILING DATE:
~ ;      CLASSIFICATION:
~ ;    ATTORNEY/AGENT INFORMATION:
~ ;      NAME:  Zeller, Karen J.
~ ;      REGISTRATION NUMBER:  37,071
~ ;      REFERENCE/DOCKET NUMBER:  PA-0001 US
~ ;    TELECOMMUNICATION INFORMATION:
~ ;      TELEPHONE:  (650) 855-0555
~ ;      TELEFAX:  (650) 845-4166
~ ; INFORMATION FOR SEQ ID NO:  1236:
~ ;    SEQUENCE CHARACTERISTICS:
~ ;      LENGTH:  816 base pairs
~ ;      TYPE:  nucleic acid
~ ;      STRANDEDNESS:  single
~ ;      TOPOLOGY:  linear
~ ;    IMMEDIATE SOURCE:
~ ;      LIBRARY:  GENBANK
~ ;      CLONE:  g288309
US-09-023-655-1236

Query Match         66.6%;   Score 229.8;  DB 4;   Length 816;
Best Local Similarity  80.1%;   Pred. No. 1.2e-63;
Matches  270;  Conservative  0;  Mismatches  67;   Indels  0;  Gaps  0;

Qy       9 AGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCCCACTCATCGAAC  68
            ||||||  ||||    || ||||||| || ||||||||||||||||||||||||||||||
Db     110 AGAAATTCCCACAGTCATTGGTGAAAGAGACCTTGGCACTGCTTTCTACTCATCGAAC  169

Qy      69 TTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAAATAAAAATCACCAACT  128
            ||||||| ||  ||  ||||||  ||||||||||||||||||||||||  ||||||||||||
Db     170 TCTGCTGATAGCCAATGAGACTCTGAGGATTCCTGTTCCTGTACATAAAAATCACCAACT  229

Qy     129 GTGCATTAAAGAAGAGTTTTTCAGGGGTATAGACACATTGAAGAACCAAACTGCCCACCGGGGA  188
            ||||||| || ||||||||||| |||||||| ||||||||||||||| |||||||||||||| |||
Db     230 GTGCACTGAAGAAATCTTTCAGGGAATAGGGCACACTGGAGAGTCAAAACTGTTGCAAGGGGG  289

Qy     189 GGCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGGCGCCAAAA  248
            |||||||| | ||||| |  |||  |||| | ||     |||| || |||||||||||
Db     290 TACTGTGGAAAGACTATTGAAAAAACTTGTCCTTAATAAAGAAATACATTGACGGGCCAAAA  349

Qy     249 AAAAAGGTGTGCAGGAGAAAGATGAGAGTGACAAAGTTTCTTGACTACCTGACCAGTATT  308
            |||||| |||||  ||||||||| | |||| ||||||||||||||| | | |||||||||| |||
Db     350 AAAAAAGTGTGGAGAAGAGAAAGACGGGAGAGTAAACCAATTCCTGACTACCTGACCAAGAGTT  409

Qy     309 TCTTCGGTGTAATAAAACACCCGAGTGGGACACCCGGAAAGT  345
            |||||||||||| ||| ||||||||||||||||||||||||| |||||
Db     410 TCTTCGGTGTAATGACACCCGAGTGGATAAATAGAAAGT  446
```

THIS PAGE BLANK (USPTO)

OM nucleic - nucleic search, using sw model

Copyright (c) 1993 - 2005 Compugen Ltd.	GenCore version 5.1.6	

Run on: August 7, 2005, 18:32:58 ; Search time 1662.18 Seconds
                                            (without alignments)
                                            10057.309 Million cell updates/sec

Title: US-10-787-382-9
Perfect score: 345
Sequence: 1 tttgctgtagaaatcccat...............ccgagtggaccaccggaaagt 345

Scoring table: IDENTITY_NUC
                  Gapop 10.0 , Gapext 1.0

Searched: 4708233 seqs, 2422760795 residues

Total number of hits satisfying chosen parameters: 9416466

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
                  Maximum Match 100%
                  Listing first 45 summaries

Database :   GenEmbl:*

    1: gb_ba:*
    2: gb_htg:*
    3: gb_in:*
    4: gb_Om:*
    5: gb_ov:*
    6: gb_pat:*
    7: gb_ph:*
    8: gb_pl:*
    9: gb_pr:*
   10: gb_ro:*
   11: gb_sts:*
   12: gb_sy:*
   13: gb_un:*
   14: gb_vi:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	345	100.0	345	6	BD211562	Canine an
2	345	100.0	345	6	BD211563	Canine an
3	345	100.0	345	6	AR241540	Canine an
4	345	100.0	345	6	AR241541	Sequence
5	345	100.0	345	6	AR254496	Sequence
6	345	100.0	345	6	AR254497	Sequence
7	402	100.0	402	6	BD211560	Canine an
8	402	100.0	402	6	BD211561	Canine an
9	402	100.0	402	6	AR241538	Sequence
10	402	100.0	402	6	AR241539	Sequence
11	402	100.0	402	6	AR254494	Sequence
12	345	100.0	402	6	AR254495	Sequence
13	345	100.0	610	4	AF331919	Canis fam
14	345	100.0	610	6	BD211558	Canine an
15	345	100.0	610	6	BD211559	Canine an
16	345	100.0	610	6	AR241536	Sequence
17	345	100.0	610	6	AR241537	Sequence
18	345	100.0	610	6	AR254492	Sequence
19	345	100.0	610	6	AR254493	Sequence
20	341.8	99.1	405	6	AR300436	Sequence
21	341.8	99.1	405	6	AX083939	Sequence
22	322.8	93.6	356	4	AF091133	Canis fam
23	290.2	84.1	405	4	U91947	Equus cabal
24	289.6	83.9	838	4	AF025436	Felis cat
25	285.4	82.7	405	4	AF068770	Felis cat
26	283.8	82.3	405	4	Z67872	B.taurus mR
27	280	81.2	529	4	BTINTLEUS	
28	278.4	80.7	405	4	SSC133452	Sus scrof
29	274.8	79.7	520	4	SSC010088	Sus scrof
30	259.4	75.2	354	4	OAU35038	Ovis aries
31	250	72.5	343	6	AF051372	Felis cat
32	234.6	68.0	405	4	AX083948	Sequence
33	231.4	67.1	405	9	AF294756	Saimiri s
34	231.4	67.1	459	9	CEVINS A	Cercocebus
35	231.4	67.1	816	6	BC066282	Homo sapi
36	231.4	67.1	816	9	CQ721603	Sequence
37	231.4	67.1	816	9	CQ721603	Sequence
38	231.4	67.1	816	6	E01639	cDNA encodi
39	231.4	67.1	858	6	E13591	cDNA encodi
40	231.4	67.1	858	6	H31L5R	
41	231.4	67.1	864	6	AX766523	Sequence
42	231.4	67.1	864	6	AX766525	Sequence
43	229.8	66.6	816	6	AR380691	Sequence
44	229.8	66.6	816	6	H5BCDFIA	
45	225	65.2	405	9	MMU19848	Macaca mula

ALIGNMENTS

RESULT 1
BD211562
LOCUS   BD211562   345 bp   DNA   linear   PAT 17-JUL-2003
DEFINITION Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same.
ACCESSION   BD211562
VERSION   BD211562
KEYWORDS   JP 2002516104-A/68.
SOURCE   Canis familiaris (dog)
  ORGANISM Canis familiaris
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1 (bases 1 to 345)
  AUTHORS   Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same
  JOURNAL   Patent: JP 2002516104-A 68 04-JUN-2002;
            HESKA CORP
COMMENT   Canis familiaris (dog)
         PN   JP 2002516104-A/68
         PD   04-JUN-2002
         PF   28-MAY-1999 JP 200551002
         PR   29-MAY-1998 US   60/087306
         PI   GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
            C12N15/09,A61K31/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
         PC   A61K39/395,
         PC   A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,C07K14/535,
         PC   C07K14/54,
         PC   C07K14/56,C07K14/705,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
            G01N33/15,
         PC   G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC
            and feline immunoregulatory proteins, nucleic acid CC
            molecules and
         CC   method of using the same
         FH   Key   Location/Qualifiers
         FT   CDS   Location/Qualifiers
                             1..345
FEATURES   Location/Qualifiers
     source   1..345
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9615"
ORIGIN

RESULT 2

BD211563/c

Query Match   100.0%; Score 345; DB 6; Length 345;
Best Local Similarity   100.0%; Pred. No. 4.8e-83;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy      1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGGCAGAGAGACCTTGACACTGCTCTCCACT 60
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGGCAGAGAGACCTTGACACTGCTCTCCACT 60

Qy     61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCCTGAAAATAAAAAT 120
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCCTGAAAATAAAAAT 120

Qy    121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180

Qy    181 CACGCGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAAGACACATAGAG 240
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 CACGCGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAAGACACATAGAG 240

Qy    241 CGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 CGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300

Qy    301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAAGT 345
          |||||||||||||||||||||||||||||||||||||||||||||||
Db    301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAAGT 345
```

LOCUS   BD211563   345 bp   DNA   linear   PAT 17-JUL-2003
DEFINITION   Canine and feline immunoregulatory proteins, nucleic acid molecules
             and method of using the same.
ACCESSION   BD211563
VERSION   BD211563.1 GI:33021333
KEYWORDS   JP 2002516104-A/69.
SOURCE   Canis familiaris
  ORGANISM   Canis familiaris
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Laurasiatheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1 (bases 1 to 345)
  AUTHORS   Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine and feline immunoregulatory proteins, nucleic acid molecules
             and method of using the same.
  JOURNAL   Patent: JP 2002516104-A 69 04-JUN-2002;
             HESKA CORP
COMMENT   JP 2002516104-A/69.
OS   Canis familiaris (dog)
PN   JP 2002516104-A/69
PD   04-JUN-2002
PF   28-MAY-1999 JP 200551002
PR   29-MAY-1998 US 60/087306
PI   GEKKEE SIM, SHUMIN YANG, MATHEW J DREITZ, RAMANI S WONDERLING PC
             C12N15/09,A61K31/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
PC   A61K39/395, PC
PC   A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/535,
PC   C07K14/54, PC
PC   C07K14/56,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
             G01N33/15,
PC   G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC   Canine
             and feline immunoregulatory proteins, nucleic acid CC
             molecules and
             method of using the same
FEATURES   Location/Qualifiers
     source   1..345
                     /organism="Canis familiaris"
FH   Key   Location/Qualifiers
FT   source   1..345
FT   /organism="Canis familiaris (dog)".
ORIGIN
                     1. 345
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9615"

RESULT 3

AR241540

AR241540/c

Query Match   100.0%; Score 345; DB 6; Length 345;
Best Local Similarity   100.0%; Pred. No. 4.8e-83;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy      1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGGCAGAGAGACCTTGACACTGCTCTCCACT 60
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    345 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGGCAGAGAGACCTTGACACTGCTCTCCACT 286

Qy     61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCCTGAAAATAAAAAT 120
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    285 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCCTGAAAATAAAAAT 226

Qy    121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    225 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 166

Qy    181 CACGCGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAAGACACATAGAG 240
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    165 CACGCGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAAGACACATAGAG 106

Qy    241 CGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    105 CGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 46

Qy    301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAAGT 345
          |||||||||||||||||||||||||||||||||||||||||||||||
Db     45 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAAGT 1
```

LOCUS   AR241540   345 bp   DNA   linear   PAT 20-DEC-2002
DEFINITION   Sequence 85 from patent US 6471957.
ACCESSION   AR241540
VERSION   AR241540.1 GI:27287249
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM   Unknown.
             Unclassified.
REFERENCE   1 (bases 1 to 345)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine IL-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 85 29-OCT-2002;
FEATURES   Location/Qualifiers
     source   1..345
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

RESULT (continued)

Query Match   100.0%; Score 345; DB 6; Length 345;
Best Local Similarity   100.0%; Pred. No. 4.8e-83;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy      1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGGCAGAGAGACCTTGACACTGCTCTCCACT 60
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGGCAGAGAGACCTTGACACTGCTCTCCACT 60

Qy     61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCCTGAAAATAAAAAT 120
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCCTGAAAATAAAAAT 120

Qy    121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180

Qy    181 CACGCGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAAGACACATAGAG 240
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 CACGCGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAAGACACATAGAG 240

Qy    241 CGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 CGCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
```

RESULT 4

```
Qy  301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
        |||||||||||||||||||||||||||||||||||||||||||||||
Db  301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
```

LOCUS   AR241541/c
AR241541
DEFINITION Sequence 87 from patent US 6471957.
ACCESSION   AR241541   345 bp   DNA   linear   PAT 20-DEC-2002
VERSION   AR241541.1 GI:27287250
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 345)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine Il-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 87 29-OCT-2002;
FEATURES   Location/Qualifiers
     source   1..345
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match   100.0%; Score 345; DB 6; Length 345;
Best Local Similarity 100.0%; Pred. No. 4.8e-83;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGTGGCAGAGAACCTTGACACTGCTCCACT  60
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  345 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGTGGCAGAGAACCTTGACACTGCTCCACT 286

Qy   61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAT 120
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  285 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAT 226

Qy  121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  225 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 166

Qy  181 CACGGGGGAGGCGTGTGATAAAACTATTCCAAAAACTTGTCTTTAATAAAGAGAACACATAGAG 240
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  165 CACGGGGGAGGCGTGTGATAAAACTATTCCAAAAACTTGTCTTTAATAAAGAGAACACATAGAG 106

Qy  241 CGCCAAAAAAAAAGGTGTGCACGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  105 CGCCAAAAAAAAAGGTGTGCACGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 46

Qy  301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
        |||||||||||||||||||||||||||||||||||||||||||||||
Db   45 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 1
```

RESULT 5

LOCUS   AR254496/c
AR254496
DEFINITION Sequence 85 from patent US 6482403.
ACCESSION   AR254496   345 bp   DNA   linear   PAT 20-DEC-2002
VERSION   AR254496.1 GI:27303384
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 345)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Caniney Il-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 85 19-NOV-2002;
FEATURES   Location/Qualifiers
     source   1..345
                     /organism="unknown"
                     /mol_type="genomic DNA"

RESULT 6

LOCUS   AR254497/c
AR254497
DEFINITION Sequence 87 from patent US 6482403.
ACCESSION   AR254497   345 bp   DNA   linear   PAT 20-DEC-2002
VERSION   AR254497.1 GI:27303385
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 345)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Caniney Il-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 87 19-NOV-2002;
FEATURES   Location/Qualifiers
     source   1..345
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match   100.0%; Score 345; DB 6; Length 345;
Best Local Similarity 100.0%; Pred. No. 4.8e-83;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGTGGCAGAGAACCTTGACACTGCTCCACT  60
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGTGGCAGAGAACCTTGACACTGCTCCACT 60

Qy   61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAT 120
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAT 120

Qy  121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180

Qy  181 CACGGGGGAGGCGTGTGATAAAACTATTCCAAAAACTTGTCTTTAATAAAGAGAACACATAGAG 240
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 CACGGGGGAGGCGTGTGATAAAACTATTCCAAAAACTTGTCTTTAATAAAGAGAACACATAGAG 240

Qy  241 CGCCAAAAAAAAAGGTGTGCACGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 CGCCAAAAAAAAAGGTGTGCACGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300

Qy  301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
        |||||||||||||||||||||||||||||||||||||||||||||||
Db  301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
```

ORIGIN

Query Match   100.0%; Score 345; DB 6; Length 345;
Best Local Similarity 100.0%; Pred. No. 4.8e-83;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGTGGCAGAGAACCTTGACACTGCTCCACT  60
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  345 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGTGGCAGAGAACCTTGACACTGCTCCACT 286

Qy   61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAT 120
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  285 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAT 226

Qy  121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  225 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 166

Qy  181 CACGGGGGAGGCGTGTGATAAAACTATTCCAAAAACTTGTCTTTAATAAAGAGAACACATAGAG 240
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  165 CACGGGGGAGGCGTGTGATAAAACTATTCCAAAAACTTGTCTTTAATAAAGAGAACACATAGAG 106

Qy  241 CGCCAAAAAAAAAGGTGTGCACGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  105 CGCCAAAAAAAAAGGTGTGCACGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 46

Qy  301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
```

RESULT 7

```
Db  105  CGCCAAAAAAAAAGTGTGCAGGAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  46

Qy  301  CAAGTATTTCTTTGGTGTGTAATAAAACACCGAGTGGACACCGGAAAGT  345
         |||||||||||||||||||||||||||||||||||||||||||||||||
Db   45  CAAGTATTTCTTTGGTGTGTAATAAAACACCGAGTGGACACCGGAAAGT  1
```

```
LOCUS       BD211560              402 bp    DNA    linear    PAT 17-JUL-2003
DEFINITION  Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same.
ACCESSION   BD211560
VERSION     BD211560.1  GI:33021330
KEYWORDS    JP 200251610 4-A/66.
SOURCE      Canis familiaris (dog)
  ORGANISM  Canis familiaris
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1  (bases 1 to 402)
  AUTHORS   Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same
  JOURNAL   Patent: JP 2002516104-A 66 04-JUN-2002;
            HESKA CORP
COMMENT     OS   Canis familiaris (dog)
            PN   JP 200251610 2
            PD   04-JUN-2002
            PF   28-MAY-1999 JP 200055100 2
            PR   29-MAY-1998 US 60/087306
            PI   GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
            C12N15/09,A61K31/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
            A61K39/395,
            PC   A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,C07K14/535,
            PC   C07K14/54,
            PC   C07K14/56,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
            G01N33/15,
            PC   G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC    Canine
            and feline immunoregulatory proteins, nucleic acid  CC
            molecules and
            CC   method of using the same
FEATURES             Location/Qualifiers
     source          1..402
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
     FT   Key        Location/Qualifiers
     FT   source     1..402
                     /organism='Canis familiaris (dog)'.
ORIGIN
```

Query Match   100.0%; Score 345; DB 6; Length 402;
Best Local Similarity   100.0%; Pred. No. 4.7e-83;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1  TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT  60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   58  TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCGAGAGACCTTGACACTGCTCTCCACT 117

Qy   61  CATCGAAACTTGGCTGATAGGCGATGGGAACCTGATCAGTTCCTACTCCTGAAAATAAAAT 120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  118  CATCGAAACTTGGCTGATAGGCGATGGGAACCTGATCAGTTCCTACTCCTGAAAATAAAAT 177

Qy  121  CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACAAAACTGCC 180
         ||||||||||||||||||||||||||||||||||||||||||||||||||
Db  178  CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACAAAACTGCC 237

Qy  181  CACGGGGGAGGCTGTGGAATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAGACACATAGAG 240
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  238  CACGGGGGAGGCTGTGGAATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAGACACATAGAG 297

Qy  241  CGCCAAAAAAAAAGTGTGCAGGAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
         |||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  ...                                                           300
```

RESULT 8

```
Db  298  CGCCAAAAAAAAAGTGTGCAGGAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 357

Qy  301  CAAGTATTTCTTTGGTGTGTAATAAAACACCGAGTGGACACCGGAAAGT  345
         |||||||||||||||||||||||||||||||||||||||||||||||||
Db  358  CAAGTATTTCTTTGGTGTGTAATAAAACACCGAGTGGACACCGGAAAGT  402
```

```
LOCUS       BD211561/c            402 bp    DNA    linear    PAT 17-JUL-2003
DEFINITION  Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same.
ACCESSION   BD211561
VERSION     BD211561.1  GI:33021331
KEYWORDS    JP 200251610 4-A/67.
SOURCE      Canis familiaris (dog)
  ORGANISM  Canis familiaris
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1  (bases 1 to 402)
  AUTHORS   Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same
  JOURNAL   Patent: JP 2002516104-A 67 04-JUN-2002;
            HESKA CORP
COMMENT     OS   Canis familiaris (dog)
            PN   JP 200251610 2
            PD   04-JUN-2002
            PF   28-MAY-1999 JP 200055100 2
            PR   29-MAY-1998 US 60/087306
            PI   GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
            C12N15/09,A61K31/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
            A61K39/395,
            PC   A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,C07K14/535,
            PC   C07K14/54,
            PC   C07K14/56,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
            G01N33/15,
            PC   G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC    Canine
            and feline immunoregulatory proteins, nucleic acid  CC
            molecules and
            CC   method of using the same
FEATURES             Location/Qualifiers
     source          1..402
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
     FT   Key        Location/Qualifiers
     FT   source     1..402
                     /organism='Canis familiaris (dog)'.
ORIGIN
```

Query Match   100.0%; Score 345; DB 6; Length 402;
Best Local Similarity   100.0%; Pred. No. 4.7e-83;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    1  TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT  60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  345  TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCGAGAGACCTTGACACTGCTCTCCACT 286

Qy   61  CATCGAAACTTGGCTGATAGGCGATGGGAACCTGATCAGTTCCTACTCCTGAAAATAAAAT 120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  285  CATCGAAACTTGGCTGATAGGCGATGGGAACCTGATCAGTTCCTACTCCTGAAAATAAAAT 226

Qy  121  CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACAAAACTGCC 180
         ||||||||||||||||||||||||||||||||||||||||||||||||||
Db  225  CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACAAAACTGCC 166

Qy  181  CACGGGGGAGGCTGTGGAATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAGACACATAGAG 240
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  165  CACGGGGGAGGCTGTGGAATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAGACACATAGAG 106

Qy  241  CGCCAAAAAAAAAGTGTGCAGGAGGAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
         |||||||||||||||||||||||||||||||||||||||||||||||||||||
Db                                                                    300
```

```
Db     105 CGCCAAAAAAAAGGTGTCAGGAGGAAAGATGGGAGAGAGTGACAAAGTTCCTAGACTACCTG 46
Qy     301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
Db      45 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 1

RESULT 9
LOCUS       AR241538          402 bp    DNA         linear   PAT 20-DEC-2002
DEFINITION  Sequence 83 from patent US 6471957.
ACCESSION   AR241538
VERSION     AR241538.1  GI:27287247
KEYWORDS
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Canine IL-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 83 29-OCT-2002;
FEATURES             Location/Qualifiers
     source          1..402
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match             100.0%;  Score 345;  DB 6;  Length 402;
Best Local Similarity   100.0%;  Pred. No. 4.7e-83;
Matches  345;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy      1 TTTGCTGTAGAAAAATCCATGAATAGACTGGTTGGGCAGAGAGACCTTGACACTGCTCTCCACT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     58 TTTGCTGTAGAAAAATCCATGAATAGACTGGTTGGGCAGAGAGACCTTGACACTGCTCTCCACT 117
Qy     61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATCATTCCTACTCCCTGAAAATAAAAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    118 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATCATTCCTACTCCCTGAAAATAAAAT 177
Qy    121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    178 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 237
Qy    181 CACGGGGGAGGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAGAACACATAGAG 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    238 CACGGGGGAGGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAGAACACATAGAG 297
Qy    241 CGCCAAAAAAAAAGGTGTGCAGGAGGAAAGATGGGAGAGAGTGACAAAGTTCCTAGACTACCTG 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    298 CGCCAAAAAAAAAGGTGTGCAGGAGGAAAGATGGGAGAGAGTGACAAAGTTCCTAGACTACCTG 357
Qy    301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
          |||||||||||||||||||||||||||||||||||||||||||||
Db    358 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402


RESULT 10
LOCUS       AR241539/c        402 bp    DNA         linear   PAT 20-DEC-2002
DEFINITION  Sequence 84 from patent US 6471957.
ACCESSION   AR241539
VERSION     AR241539.1  GI:27287248
KEYWORDS
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Canine IL-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 84 29-OCT-2002;
FEATURES             Location/Qualifiers
     source          1..402
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match             100.0%;  Score 345;  DB 6;  Length 402;
Best Local Similarity   100.0%;  Pred. No. 4.7e-83;
Matches  345;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy      1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     58 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT 117
Qy     61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATCGATTCCTACTCCCTGAAAATAAAAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    118 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATCGATTCCTACTCCCTGAAAATAAAAT 177
Qy    121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    178 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 237
Qy    181 CACGGGGGAGGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAGAACACATAGAG 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    238 CACGGGGGAGGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAGAACACATAGAG 297
Qy    241 CGCCAAAAAAAAAGGTGTGCAGGAGGAAAGATGGGAGAGAGTGACAAAGTTCCTAGACTACCTG 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    298 CGCCAAAAAAAAAGGTGTGCAGGAGGAAAGATGGGAGAGAGTGACAAAGTTCCTAGACTACCTG 357
Qy    301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
          |||||||||||||||||||||||||||||||||||||||||||||
Db    358 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402


RESULT 11
LOCUS       AR254494          402 bp    DNA         linear   PAT 20-DEC-2002
DEFINITION  Sequence 83 from patent US 6482403.
ACCESSION   AR254494
VERSION     AR254494.1  GI:27303382
KEYWORDS
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Caniney IL-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 83 19-NOV-2002;
FEATURES             Location/Qualifiers
     source          1..402
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match             100.0%;  Score 345;  DB 6;  Length 402;
Best Local Similarity   100.0%;  Pred. No. 4.7e-83;
Matches  345;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy      1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    345 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACT 286
Qy     61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATCGATTCCTACTCCCTGAAAATAAAAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    285 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATCGATTCCTACTCCCTGAAAATAAAAT 226
Qy    121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    225 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 166
Qy    181 CACGGGGGAGGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAGAACACATAGAG 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    165 CACGGGGGAGGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAGAACACATAGAG 106
Qy    241 CGCCAAAAAAAAAGGTGTGCAGGAGGAAAGATGGGAGAGAGTGACAAAGTTCCTAGACTACCTG 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    105 CGCCAAAAAAAAAGGTGTGCAGGAGGAAAGATGGGAGAGAGTGACAAAGTTCCTAGACTACCTG 46
Qy    301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
          |||||||||||||||||||||||||||||||||||||||||||||
Db     45 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 1
```

RESULT 12

LOCUS   AR254495   402 bp   DNA   linear   PAT 20-DEC-2002
DEFINITION Sequence 84 from patent US 6482403.
ACCESSION AR254495
VERSION   AR254495.1 GI:27303383
KEYWORDS .
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE 1 (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Caniney IL-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 84 19-NOV-2002;
FEATURES   Location/Qualifiers
     source   1..402
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match 100.0%; Score 345; DB 6; Length 402;
Best Local Similarity 100.0%; Pred. No. 4.7e-83;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACT   60
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   345 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACT 286

Qy   61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAAT 120
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   285 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAAT 226

Qy   121 CACCAAACTGTGCATTAAAGAGAGTTTTTCAGGGTATAGACACAATTGAAGAACCAAACTGCC 180
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   225 CACCAAACTGTGCATTAAAGAGAGTTTTTCAGGGTATAGACACAATTGAAGAACCAAACTGCC 166

Qy   181 CACCGGGGAGGCTGTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACAATAGAG 240
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   165 CACCGGGGAGGCTGTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACAATAGAG 106

Qy   241 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   105 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG   46

Qy   301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
            |||||||||||||||||||||||||||||||||||||||||||||
Db   45 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT   1

RESULT 13

LOCUS   AF331919   610 bp   mRNA   linear   MAM 04-OCT-2001
DEFINITION Canis familiaris interleukin-5 mRNA, complete cds.
ACCESSION AF331919
VERSION   AF331919.1 GI:15919180
KEYWORDS .
SOURCE   Canis familiaris (dog)
  ORGANISM Canis familiaris
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE 1 (bases 1 to 610)
  AUTHORS   Yang,S., Selins,K.S., Weber,E. and McCall,C.
  TITLE   Canine interleukin-5: molecular characterization of the gene and
            expression of biologically active recombinant protein
  JOURNAL   J. Interferon Cytokine Res. 21 (6), 361-367 (2001)

MEDLINE   21334408
  PUBMED   11440633
REFERENCE 2 (bases 1 to 610)
  AUTHORS   Yang,S.
  TITLE   Direct Submission
  JOURNAL   Submitted (22-DEC-2000) Immunology, Heska Corporation, 1613
            Prospect Parkway, Ft Collins, CO 80525, USA
FEATURES   Location/Qualifiers
     source   1..610
                     /organism="Canis familiaris"
                     /mol_type="mRNA"
                     /db_xref="taxon:9615"
     5'UTR   1..28
     CDS   29..433
                     /note="IL-5"
                     /codon_start=1
                     /product="interleukin-5"
                     /protein_id="AAL10715.1"
                     /db_xref="GI:15919181"
                     /translation="MRMLLNLSLLALGAXVSAFAVENPNNRLVAETLTLLSTHRTWL
                     IGDGNLMIPTPENKNHQLCIKEVFQGIDTLKNQTPAHGEAVDKLFQNLSLIKEHIERQX
                     KRCAGBERWRVTKFIDYLQVFLGVINTEWTPES"
     3'UTR   433..610
ORIGIN

Query Match 100.0%; Score 345; DB 4; Length 610;
Best Local Similarity 100.0%; Pred. No. 4.6e-83;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACT   60
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   86 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACT 145

Qy   61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAAT 120
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   146 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAAT 205

Qy   121 CACCAAACTGTGCATTAAAGAGAGTTTTTCAGGGTATAGACACAATTGAAGAACCAAACTGCC 180
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   206 CACCAAACTGTGCATTAAAGAGAGTTTTTCAGGGTATAGACACAATTGAAGAACCAAACTGCC 265

Qy   181 CACCGGGGAGGCTGTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACAATAGAG 240
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   266 CACCGGGGAGGCTGTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACAATAGAG 325

Qy   241 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   326 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 385

Qy   301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
            |||||||||||||||||||||||||||||||||||||||||||||
Db   386 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 430

RESULT 14

LOCUS   BD211558   610 bp   DNA   linear   PAT 17-JUL-2003
DEFINITION Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same.
ACCESSION BD211558
VERSION   BD211558.1 GI:33021328
KEYWORDS JP 200251610-A/64.
SOURCE   Canis familiaris (dog)
  ORGANISM Canis familiaris
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE 1 (bases 1 to 610)
  AUTHORS   Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same
  JOURNAL   Patent: JP 200251610-A 64 04-JUN-2002;
  COMMENT   OS   Canis familiaris (dog)
HESKA CORP

Qy   298 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 357
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 357

Qy   358 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
            |||||||||||||||||||||||||||||||||||||||||||||
Db   358 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402

COMMENT
        PN JP 20025I6104-A/64
        PD 04-JUN-2002
        PF 28-MAY-1999 JP 200055I002
        PR 29-MAY-1998 US   60/087306
        PI GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
            CI2NI5/09,A61K3I/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
        PC A61K39/395,
        PC A61K45/00,A61K48/00,A61P37/02,A61K38/00,A61K39/00,A61K39/395,
        PC C07KI4/54,
        PC C07KI4/56,C07KI4/705,C07KI6/24,C07KI6/28,CI2NI/21,CI2N5/I0, PC
            G0IN33/I5,
        PC G0IN33/50,CI2NI5/00,A61K37/02,A61K37/66,CI2N5/00 CC   Canine
        and feline immunoregulatory proteins, nucleic acid CC
        molecules and
        CC method of using the same
        FH Key   Location/Qualifiers
        FT source   1..610
        FT   /organism="Canis familaris"
        FT   /mol_type="genomic DNA"
        FT   /db_xref="taxon:9615"

ORIGIN

        Query Match   100.0%; Score 345; DB 6; Length 610;
        Best Local Similarity 100.0%; Pred. No. 4.6e-83;
        Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCGAGAGACCTTGACACTGCTCTCCACT 60
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   86 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCGAGAGACCTTGACACTGCTCTCCACT 145

Qy   61 CATCGGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   146 CATCGGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 205

Qy   121 CACCAACTGTGCATTAAAAGAAGAGTTTTTTCAGGGTGTATAGACACATTGAAGAACCAAAACTGCC 180
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   206 CACCAACTGTGCATTAAAAGAAGAGTTTTTTCAGGGTGTATAGACACATTGAAGAACCAAAACTGCC 265

Qy   181 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTCTTTAATAAAAAGAACACAATAGAG 240
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   266 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTCTTTAATAAAAAGAACACAATAGAG 325

Qy   241 CGCCAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   326 CGCCAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 385

Qy   301 CAAGTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCCGGAAAGT 345
            |||||||||||||||||||||||||||||||||||||||||||||||||
Db   386 CAAGTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCCGGAAAGT 430

RESULT 15

LOCUS   BD2I1559
LOCUS   BD2I1559/c
DEFINITION   Canine and feline immunoregulatory proteins, nucleic acid molecules
               and method of using the same.
ACCESSION   BD2I1559
VERSION   BD2I1559.1   GI:33021329
KEYWORDS   JP 2002516104-A/65.
SOURCE   Canis familiaris
  ORGANISM   Canis familiaris (dog)
               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
               Mammalia; Eutheria; Theria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1 (bases 1 to 610)
  AUTHORS   Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine and feline immunoregulatory proteins, nucleic acid molecules
               and method of using the same
  JOURNAL   Patent: JP 2002516104-A 65 04-JUN-2002;
               HESKA CORP
  OS   Canis familiaris (dog)
  PN   JP 2002516104-A/65

DEFINITION   Canine and feline immunoregulatory proteins, nucleic acid molecules
               and method of using the same.
LOCUS   BD2I1559   610 bp   DNA   linear   PAT 17-JUL-2003

Search completed: August   8, 2005, 05:12:05
Job time : 1663.18 secs

        PD 04-JUN-2002
        PF 28-MAY-1999 JP 200055I002
        PR 29-MAY-1998 US   60/087306
        PI GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
            CI2NI5/09,A61K39/395,A61K3I/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
        PC A61K39/395,
        PC A61K45/00,A61K48/00,A61P37/02,A61K38/00,A61P37/04,C07KI4/475,C07KI4/535,
        PC C07KI4/54,
        PC C07KI4/56,C07KI4/705,C07KI6/24,C07KI6/28,CI2NI/21,CI2N5/I0, PC
            G0IN33/I5,
        PC G0IN33/50,CI2NI5/00,A61K37/02,A61K37/66,CI2N5/00 CC   Canine
        and feline immunoregulatory proteins, nucleic acid CC
        molecules and
        CC method of using the same
        FH Key   Location/Qualifiers
        FT source   1..610
        FT   /organism="Canis familaris"
        FT   /mol_type="genomic DNA"
        FT   /db_xref="taxon:9615"

ORIGIN

        Query Match   100.0%; Score 345; DB 6; Length 610;
        Best Local Similarity 100.0%; Pred. No. 4.6e-83;
        Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCGAGAGACCTTGACACTGCTCTCCACT 60
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   525 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCGAGAGACCTTGACACTGCTCTCCACT 466

Qy   61 CATCGGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   465 CATCGGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 406

Qy   121 CACCAACTGTGCATTAAAAGAAGAGTTTTTTCAGGGTGTATAGACACATTGAAGAACCAAAACTGCC 180
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   405 CACCAACTGTGCATTAAAAGAAGAGTTTTTTCAGGGTGTATAGACACATTGAAGAACCAAAACTGCC 346

Qy   181 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTCTTTAATAAAAAGAACACAATAGAG 240
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   345 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTCTTTAATAAAAAGAACACAATAGAG 286

Qy   241 CGCCAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   285 CGCCAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 226

Qy   301 CAAGTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCCGGAAAGT 345
            |||||||||||||||||||||||||||||||||||||||||||||||||
Db   225 CAAGTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCCGGAAAGT 181

THIS PAGE BLANK (USPTO)

OM nucleic - nucleic search, using sw model

Copyright (c) 1993 - 2005 Compugen Ltd.

GenCore version 5.1.6

Run on: August 7, 2005, 19:25:03 ; Search time 231.259 Seconds
(without alignments)
8831.282 Million cell updates/sec

Title: US-10-787-382-9
Perfect score: 345
Sequence: 1 tttgctgtagaaatcccat..........ccgagtggacaccggaagt 345
Scoring table: IDENTITY NUC
Gapop 10.0 , Gapext 1.0
Searched: 4390206 seqs, 295970667 residues
Total number of hits satisfying chosen parameters: 8780412

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Database : N_Geneseq_16Dec04:*
1: geneseqn1980s:*
2: geneseqn1990s:*
3: geneseqn2000s:*
4: geneseqn2001s:*
5: geneseqn2001as:*
6: geneseqn2001bs:*
7: geneseqn2002as:*
8: geneseqn2002bs:*
9: geneseqn2003as:*
10: geneseqn2003bs:*
11: geneseqn2003cs:*
12: geneseqn2004ds:*
13: geneseqn2004as:*
14: geneseqn2004bs:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	Match DB	ID	Description
1	345	100.0	345	3	AAZ55550	Aaz55550 Canine ma
2	345	100.0	345	3	AAZ55551	Aaz55551 Canine ma
c	3	345	100.0	402	3	AAZ55548	Aaz55548 Canine in
c	4	345	100.0	402	3	AAZ55549	Aaz55549 Canine in
c	5	345	100.0	610	3	AAZ55546	Aaz55546 Canine in
6	345	100.0	610	3	AAZ55547	Aaz55547 Canine in
c	7	341.8	99.1	405	4	AAF74300	Aaf74300 Canine in
8	289.6	83.9	838	5	AAZ44265	Aaz44265 Porcine I
9	287.4	83.3	393	4	AAF74306	Aaf74306 Canine in
10	274.8	79.7	399	2	AAT50756	Aat50756 Ovine IL-
11	274.8	79.7	520	2	AAT50755	Aat50755 Ovine IL-
12	231.4	67.1	816	3	AAA34857	Aaa34857 Human ade
13	231.4	67.1	816	3	AAA13338	Aaa13338 Human int
14	231.4	67.1	816	3	AAF20979	Aaf20979 Human low
15	231.4	67.1	816	10	ADG33104	Adg33104 Human DNA
16	231.4	67.1	816	10	ABZ96673	Abz96673 Human nuc
17	231.4	67.1	816	13	ACF63368	Acf63368 Human int
18	231.4	67.1	816	13	ADP56009	Adp56009 Human PRO
19	231.4	67.1	858	9	AAL61293	Aal61293 hIL5-P2-P
20	231.4	67.1	858	9	AAL61294	Aal61294 hIL5-P30-
21	231.4	67.1	864	9	AAL61296	Aal61296 hIL5.37 v
22	231.4	67.1	864	9	AAL61295	Aal61295 hIL5.36 v
23	231.4	67.1	4057	3	AAA34858	Aaa34858 Human ade
24	231.4	67.1	4057	2	AAF20980	Aaf20980 Human low
25	231.4	67.1	4057	10	ABZ96674	Abz96674 Human nuc
26	231.4	67.1	4057	11	ABD20523	Abd20523 Human pul
27	231.4	67.1	4057	11	ABD20522	Abd20522 Human pul
28	229.8	66.6	402	1	AAN81380	Aan81380 A human B
29	229.8	66.6	816	11	ADI31910	Adi31910 Human cDN
30	224.6	65.1	370	1	AAN91647	Aan91647 Synthetic
31	206	59.7	377	2	AAV01595	Aav01595 Human int
32	196.4	56.9	348	2	AAT14922	Aat14922 T cell re
33	196.4	56.9	399	2	AAV64061	Aav64061 T cell re
34	196.4	56.9	402	2	AAT14921	Aat14921 T cell re
35	196.4	56.9	1533	1	AAN82431	Aan82431 B cell di
36	196.4	56.9	1534	2	AAT88013	Aat88013 Murine In
37	196.4	56.9	1623	2	AAV64062	Aav64062 Plasmid p
38	196.4	56.9	1623	2	AAT14925	Aat14925 T cell re
39	195	56.5	252	4	AAF74305	Aaf74305 Canine in
40	194.4	56.4	342	2	AAT14923	Aat14923 T cell re
41	194.2	56.3	339	2	AAT14924	Aat14924 T cell re
42	190.6	55.2	339	10	ADB53890	Adb53890 Primary r
43	190	55.1	1945	1	AAN80461	Aan80461 Clone 115
44	183.6	53.2	481	3	AAA43842	Aaa43842 Human sec
45	178.4	51.7	385	3	AAC68870	Aac68870 Modified

ALIGNMENTS

RESULT 1
AAZ55550
ID AAZ55550 standard; cDNA; 345 BP.
XX
AC AAZ55550;
XX
DT 14-MAR-2000 (first entry)
XX
DE Canine mature interleukin-5 (IL-5) cDNA.
XX
KW Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS Canis familiaris.
XX
XX
PN WO9961618-A2.
XX
PR 29-MAY-1998; 98US-0087306P.
XX
PA (HESK-) HESKA CORP.
XX
PI Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR WPI; 2000-072623/06.
DR P-PSDB; AAY58220.
XX
PT Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS Claim 1h; Page 226-227; 264pp; English.
XX
CC Sequences AAZ55546-Z55551 represent cDNA sequences encoding canine
CC interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC feline interleukin-5 (IL-5), canine IL-5, feline CD40, canine or feline
CC ligand), canine Flt-3 ligand, canine IL-13, feline interferon-alpha
CC and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC nucleotides which encode these immunoregulatory proteins. The proteins,
CC their associated nucleic acids, specific antibodies and inhibitors may be
CC used as vaccines for therapeutic or prophylactic regulation of an immune

CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting.
XX
SQ   Sequence 345 BP; 120 A; 68 C; 78 G; 79 T; 0 U; 0 Other;

Query Match   100.0%; Score 345; DB 3; Length 345;
Best Local Similarity 100.0%; Pred. No. 5.6e-93;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTCGCAGAGACCTTGACACTGCTCCCACT   60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTCGCAGAGACCTTGACACTGCTCCCACT   60

Qy   61 CATCGGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAAT 120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 CATCGGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAAT 120

Qy 121 CACCAAACTGTCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 121 CACCAAACTGTCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180

Qy 181 CACCGGGGAGAGGCTGTGGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 181 CACCGGGGAGAGGCTGTGGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240

Qy 241 CGCCAAAAAAAAAGGTGTGCAGGAGAGAAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 241 CGCCAAAAAAAAAGGTGTGCAGGAGAGAAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300

Qy 301 CAAGTATTTCTTGGTGTAATAAAACACCGAGTGGACACCGGAAAGT 345
         ||||||||||||||||||||||||||||||||||||||||||||||
Db 301 CAAGTATTTCTTGGTGTAATAAAACACCGAGTGGACACCGGAAAGT 345

RESULT 2
AAZ55551/c
ID   AAZ55551 standard; cDNA; 345 BP.
XX
AC   AAZ55551;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine mature interleukin-5 (IL-5) cDNA complement.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999; 99WO-US011942.
XX
PR   29-MAY-1998; 98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58220.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,

---

PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 228; 264pp; English.
XX
CC   Sequences AAZ55546-255551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine or feline CD40 ligand, canine or feline CD154 (CD40
CC   ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF); and
CC   nucleotide sequences which encode these immunoregulatory proteins. The
CC   proteins, their associated nucleic acids, specific antibodies and inhibitors of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting.
XX
SQ   Sequence 345 BP; 79 A; 78 C; 68 G; 120 T; 0 U; 0 Other;

Query Match   100.0%; Score 345; DB 3; Length 345;
Best Local Similarity 100.0%; Pred. No. 5.6e-93;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTCGCAGAGACCTTGACACTGCTCCCACT   60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 345 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTCGCAGAGACCTTGACACTGCTCCCACT 286

Qy   61 CATCGGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAAT 120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 285 CATCGGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAAT 226

Qy 121 CACCAAACTGTCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 225 CACCAAACTGTCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 166

Qy 181 CACCGGGGAGAGGCTGTGGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 165 CACCGGGGAGAGGCTGTGGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 106

Qy 241 CGCCAAAAAAAAAGGTGTGCAGGAGAGAAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 105 CGCCAAAAAAAAAGGTGTGCAGGAGAGAAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG   46

Qy 301 CAAGTATTTCTTGGTGTAATAAAACACCGAGTGGACACCGGAAAGT 345
         ||||||||||||||||||||||||||||||||||||||||||||||
Db   45 CAAGTATTTCTTGGTGTAATAAAACACCGAGTGGACACCGGAAAGT   1

RESULT 3
AAZ55548
ID   AAZ55548 standard; cDNA; 402 BP.
XX
AC   AAZ55548;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA coding region.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.

```
PF   28-MAY-1999;   99WO-US011942.
XX
PR   29-MAY-1998;   98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wondering RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58219.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
     useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 225; 264pp; English.
XX
CC   Sequences AAZ55546-Z55551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting.
XX
SQ   Sequence 402 BP; 129 A; 79 C; 93 G; 101 T; 0 U; 0 Other;

Query Match   100.0%;   Score 345;  DB 3;  Length 402;
Best Local Similarity   100.0%;   Pred. No. 6e-93;
Matches 345; Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy      1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 117

Qy     61 CATCGAACTTGGCTGATAGGCGCGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    118 CATCGAACTTGGCTGATAGGCGCCATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 177

Qy    121 CACCAACTGTGCCATTAAAGAAGTTTTTCAGGGTATAGACACAGTGAAGAACCAAAACTGCC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    178 CACCAACTGTGCCATTAAAGAAGTTTTTCAGGGTATAGACACAATTGAAGAACCAAAACTGCC 237

Qy    181 CACGGGGGAGGCTGTGGAATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    238 CACGGGGGAGGCTGTGGAATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 297

Qy    241 CGCCAAAAAAAAAAAGGTGTGCAGGAGAGGAGAGTTCCTAGACTACCTG 300
          |||||||||||||||||||||||||||||||||||||||||||||||
Db    298 CGCCAAAAAAAAAAAGGTGTGCAGGAGAGGAGAGTTCCTAGACTACCTG 357

Qy    301 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 345
          |||||||||||||||||||||||||||||||||||||||||||||||
Db    358 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGGACACCGGAAAGT 402

RESULT 4
AAZ55549/c
ID   AAZ55549 standard; cDNA; 402 BP.
XX
AC   AAZ55549;
XX
DT   14-MAR-2000 (first entry)
```

```
XX
DE   Canine interleukin-5 (IL-5) cDNA coding region complement.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999;   99WO-US011942.
PR   29-MAY-1998;   98US-0087306P.
XX
PI   Sim G, Yang S, Dreitz MJ, Wondering RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58219.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
     useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 226; 264pp; English.
XX
CC   Sequences AAZ55546-Z55551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   of activity, while the antibodies may be used in detection, and in drug
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   targeting
XX
SQ   Sequence 402 BP; 101 A; 93 C; 79 G; 129 T; 0 U; 0 Other;

Query Match   100.0%;   Score 345;  DB 3;  Length 402;
Best Local Similarity   100.0%;   Pred. No. 6e-93;
Matches 345; Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy      1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    345 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 286

Qy     61 CATCGAACTTGGCTGATAGGCGCGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    285 CATCGAACTTGGCTGATAGGCGCCATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 226

Qy    121 CACCAACTGTGCCATTAAAGAAGTTTTTCAGGGTATAGACACAGTGAAGAACCAAAACTGCC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    225 CACCAACTGTGCCATTAAAGAAGTTTTTCAGGGTATAGACACAATTGAAGAACCAAAACTGCC 166

Qy    181 CACGGGGGAGGCTGTGGAATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    165 CACGGGGGAGGCTGTGGAATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG 106

Qy    241 CGCCAAAAAAAAAAAGGTGTGCAGGAGAGGAGAGTTCCTAGACTACCTG 300
          ||||||||||||||||||||||||||||||||||||||||||||||
Db    105 CGCCAAAAAAAAAAAGGTGTGCAGGAGAGGAGAGTTCCTAGACTACCTG 46
```

```
Qy  301 CAAGTATTTCTTGGTGTAATAAAACACCGAGTGGACACCGGAAAGT 345
        ||||||||||||||||||||||||||||||||||||||||||||||
Db   45 CAAGTATTTCTTGGTGTAATAAAACACCGAGTGGACACCGGAAAGT 1
```

RESULT 5
Db

ID   AAZ55546 standard; cDNA; 610 BP.
XX
AC   AAZ55546;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
FH   Key   Location/Qualifiers
FT   CDS   29..433
FT   /*tag= a
FT   /product= "Canine IL-5"
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999; 99WO-US011942.
XX
PR   29-MAY-1998; 98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58219.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 223-224; 264pp; English.
XX
CC   Sequences AAZ55546-255551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-5, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acid, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targetting.
XX
SQ   Sequence 610 BP; 202 A; 114 C; 139 G; 155 T; 0 U; 0 Other;

Query Match   100.0%; Score 345; DB 3; Length 610;
Best Local Similarity   100.0%; Pred. No. 6.9e-93;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGCAGAGACCTTGACACTGTCTCCACT 60
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   86 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGCAGAGACCTTGACACTGTCTCCACT 145
```

```
Qy   61 CATCGGAACTTGGCTGATAGGCGGATGGGAACCTGATGATGATTCCTACTCCTGAAAATAAAAAT 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  146 CATCGGAACTTGGCTGATAGGCGGATGGGAACCTGATGATGATTCCTACTCCTGAAAATAAAAAT 205

Qy  121 CACCAACTGTGCATTAAAGAAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  206 CACCAACTGTGCATTAAAGAAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 265

Qy  181 CACGGGGGAGGCTGTGGGATAAAACTATTCCAAAAACTGTTCTTAATAAAGAACACATAGAG 240
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  266 CACGGGGGAGGCTGTGGGATAAAACTATTCCAAAAACTGTTCTTAATAAAGAACACATAGAG 325

Qy  241 CGCCAAAAAAAAAAGGTGTGCAGGGAGAGATTGGAGGAGAGTTGACAAAGTTCCTAGACTTG 300
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  326 CGCCAAAAAAAAAAGGTGTGCAGGGAGAGATTGGAGGAGAGTTGACAAAGTTCCTAGACTTG 385

Qy  301 CAAGTATTTCTTGGTGTAATAAAACACCGAGTGGACACCGGAAAGT 345
        ||||||||||||||||||||||||||||||||||||||||||||||
Db  386 CAAGTATTTCTTGGTGTAATAAAACACCGAGTGGACACCGGAAAGT 430
```

RESULT 6
AAZ55547/c

ID   AAZ55547 standard; cDNA; 610 BP.
XX
AC   AAZ55547;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA complement.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
FH   Key   Location/Qualifiers
FT   CDS   complement(178..582)
FT   /*tag= a
FT   /product= "Canine IL-5"
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999; 99WO-US011942.
XX
PR   29-MAY-1998; 98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58219.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 224-225; 264pp; English.
XX
CC   Sequences AAZ55546-255551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-5, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, feline interferon-alpha (IFN-alpha), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the

Column 1

```
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting.
XX
SQ   Sequence 610 BP; 155 A; 139 C; 114 G; 202 T; 0 U; 0 Other;

Query Match            100.0%;  Score 345;  DB 3;  Length 610;
Best Local Similarity  100.0%;  Pred. No. 6.9e-93;
Matches  345;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy    1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT   60
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  525 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT  466

Qy   61 CATCGAACTTGGCTGATAGGGCGATGGGAACCTGATCATTCCTACTCCTGAAAATAAAAAT  120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  465 CATCGAACTTGGCTGATAGGGCGATGGGAACCTGATCATTCCTACTCCTGAAAATAAAAAT  406

Qy  121 CACCAACTGTGTCCATTAAAGAAGAGTTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC  180
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  405 CACCAACTGTGTCCATTAAAGAAGAGTTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC  346

Qy  181 CGCCAAAAAAAAAGGTGTGGAGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG  240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  345 CACGGGCGAGGCGTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG  286

Qy  241 CACGGGCGAGGCGTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG  300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  285 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGGACAAAGTTCCTAGACTACCTG  226

Qy  285 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGGACAAAGTTCCTAGACTACCTG  285
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  225 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT  181

Qy  301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT  345
```

RESULT 7

```
ID   AAF74300 standard; DNA; 405 BP.
XX
AC   AAF74300;
XX
DT   04-MAY-2001  (first entry)
XX
DE   Canine interleukin-5 coding sequence #1.
XX
KW   Dog; interleukin-5; IL-5; allergy; cancer; gene therapy;
KW   inflammatory reaction; ds.
XX
OS   Canis sp.
XX
PN   WO20011049-A2.
XX
PD   15-FEB-2001.
XX
PF   09-AUG-2000; 2000WO-US021651.
XX
PR   10-AUG-1999; 99US-0037615.
XX
PA   (IDEX-) IDEXX LAB INC.
XX
PI   Guo H, Lawton R, Mermer B, Aiyappa AP;
XX
DR   WPI; 2001-191542/19.
DR   P-PSDB; AAB72615.
XX
PT   Novel canine interleukin 5 polynucleotide and polypeptides are used for
PT   generating antibodies which are useful in treating allergies in dogs.
PS   Claim 31; Page 46; 48pp; English.
```

Column 2

```
CC   The present invention provides the protein and coding sequences of the
CC   canine interleukin-5 (IL-5) protein. This can be used to treat allergies,
CC   cancer and inflammatory reactions in dogs. The present sequence is one
CC   version of the IL-5 coding sequence shown in the specification
XX
SQ   Sequence 405 BP; 131 A; 77 C; 94 G; 103 T; 0 U; 0 Other;

Query Match            99.1%;  Score 341.8;  DB 4;  Length 405;
Best Local Similarity  99.4%;  Pred. No. 5.4e-92;
Matches  343;  Conservative  0;  Mismatches  2;  Indels  0;  Gaps  0;

Qy    1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT   60
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT  117

Qy   61 CATCGAACTTGGCTGATAGGGCGATGGGAACCTGATCATTCCTACTCCTGAAAATAAAAAT  120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  118 CATCGAACTTGGCTGATAGGGCGATGGGAACCTGATCATTCCTACTCCTGAAAATAAAAAT  177

Qy  121 CACCAACTGTGTCCATTAAAGAAGAGTTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC  180
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  178 CACCAACTGTGTCCATTAAAGAAGAGTTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC  237

Qy  181 CGCCAAAAAAAAAGGTGTGGAGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG  240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  238 CACGGGCGAGGCGTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG  297

Qy  241 CACGGGCGAGGCGTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG  300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  298 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGGACAAAGTTCCTAGACTACCTG  357

Qy  298 CGCCAAAAAAAAAGGTGTGCAGGAGAAAGATGGAGGACAAAGTTCCTAGACTACCTG  357
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  358 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACAATGGAAAGT  402

Qy  301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT  345
```

Column 3

RESULT 8

```
ID   AA244265 standard; DNA; 838 BP.
XX
AC   AA244265;
XX
DT   31-MAR-2000  (first entry)
XX
DE   Porcine IL-5 DNA.
XX
KW   Pig; vaccine; cysticercosis; protective antigen; cC1; cC3; cC4;
KW   tenial cysticercus; gamma interferon; IFN-gamma; interleukin 5; IL-5; 88.
XX
OS   Sus scrofa.
XX
PN   CN1231339-A.
XX
PD   13-OCT-1999.
XX
PF   29-JAN-1999; 99CN-00113447.
XX
PR   29-JAN-1999; 99CN-00113447.
XX
PA   (UYTW-) UNIV NO 2 MILITARY MEDICAL PLA.
XX
PI   Sun S, Dai J;
XX
DR   WPI; 2000-087904/08.
XX
PT   Nucleic acid vaccine for cysticercosis co-contracted by human and pig.
PS   Claim 3; Page 9; 21pp; Chinese.
XX
CC   This invention describes a novel nucleic acid vaccine for preventing and
CC   curing human and pork cysticercosis. The invention involves the formation
CC   of a eukaryotic expression plasmid from fusion transcript expression unit
```

CC consisting of three protective antigen genes (cC1, cC3 and cC4) of pig
CC tenial cysticercus and coexpression unit of related cell factor gamma
CC interferon (IFN-gamma) and pork interleukin 5 (IL-5)] genes. The
CC production and purification process of said nucleic acid vaccine is
CC simple and convenient, the physical and chemical properties of the
CC vaccine are stable, and the vaccine is easy to store and transport, and
CC possesses effective immunological protective function for human and pig
CC cysticercosis. This sequence represents the pig IL-5 gene used in the
CC method of the invention
XX
SQ Sequence 838 BP; 280 A; 148 C; 171 G; 239 T; 0 U; 0 Other;

Query Match 83.9%; Score 289.6; DB 3; Length 838;
Best Local Similarity 90.1%; Pred. No. 2.9e-76;
Matches 310; Conservative 0; Mismatches 34; Indels 0; Gaps 0;

```
Qy    2 TTGCTGTAGAAAATCCCATGAATAGACTGGTTGGGCAGAGACCTTGACACTGCTCTCCACTC   61
          ||||||| |||| ||||||||||||| |||||||||||||||||||||||||||||||||||
Db  103 TTGCTGTACAAAGTCCCATGAATAGGCTGGTTGGGCAGAGACCTTGACACTGCTCTCCACTC  162

Qy   62 ATCGAAACTTGGCTATAGGCGGATGGGAAACCTGATCGATTCCTACTCCCTGAAAATAAAATC  121
Db  163 ATCGAAACTTCTACTGATAGGCGGACCTGATGATTCCTACTCCCTGAAACATAACAATC     222

Qy  122 ACCAACTGTCATTAAAGAAGAAGTTTTTCAGGGTATAGAGAACCAAAACTGCCC          181
Db  223 ACCAACTGTCCATTGAAGAAGTCTTTCAGGGTATAGACACATTAAAGAAGAAGTC         282

Qy  182 ACGGCGAGGCGTGTGGAATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAGAGC        241
Db  283 CGGGGGGATGCTGTGGAAAAGCTTTTCCGAAACTTGTCTTTAATAAAAGAAGACACACTAGAGC 342

Qy  242 GCCAAAAAAAAAGGTGTCAGGGAGAAAGATGGGAGAGAGTGACAAAGTTCCTAGACTACCTGC 301
Db  343 GCCAAAAAAAAAGGTGGAGGAAAAGATGGGAGAGAGTGACAAAGTTCCTAGACTACCTGC      402

Qy  302 AAGTATTTCTTGGTGTAATAAACACCGAGTGGGACACCGGAAAGT                   345
Db  403 AAGTGGTTCTTGGTGTAATAAACACTGAGTGGACAATGGAAAGT                    446
```

PS Claim 1; Page 35; 48pp; English.
XX
CC The present invention provides the protein and coding sequences of the
CC canine interleukin-5 (IL-5) protein. This can be used to treat allergies,
CC cancer and inflammatory reactions in dogs. The present sequence is one
CC version of the IL-5 coding sequence shown in the specification
XX
SQ Sequence 393 BP; 128 A; 82 C; 86 G; 97 T; 0 U; 0 Other;

Query Match 83.3%; Score 287.4; DB 4; Length 393;
Best Local Similarity 99.7%; Pred. No. 1e-75;
Matches 288; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

```
Qy   46 ACACTCGCTCTCCACTCATCGAAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACT 105
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 ACACTCGCTCTCCACTCATCATCGAAACTTGGCTGAATAGGCGGATGGGAACCTGATGATTCCTACT 60

Qy  106 CCTGAAAATAAAATATCACCAACTGTCATTAAAGAAGAAGTTTTTCAGGGTAATAGACACATTG 165
Db   61 CCTGAAAATAAAAATATCACCAACTGTCCATTAAAGAAGAAGTTTTTCAGGGTAATAGACACATTG 120

Qy  166 AAGAACCAAACTGCCCACCGGGGGAGGCTGTGGAATAAACTATTCCAAAACTTGTCTTTAATA 225
Db  121 AAGAACCAAACTGCCCACCGGGGGAGGCTGTGGGATAAACTATTCCAAAACTTGTCTTTAATA 180

Qy  226 AAAGAACACATAGAGCGCCAAAAAAAAAGGTGTCAGGGAGAAAGATGGTGGAGTGACAAAG 285
Db  181 AAAGAACACATAGAGCGCCAAAAAAAAAGGTGTGCAGGAGGAGAGATGGTGGAGTGACAAAG 240

Qy  286 TTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGA 334
Db  241 TTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGA 289
```

RESULT 9
AAP74306
ID AAP74306 standard; DNA; 393 BP.
XX
AC AAP74306;
XX
DT 04-MAY-2001 (first entry)
XX
DE Canine interleukin-5 coding sequence #3.
XX
KW Dog; interleukin-5; IL-5; allergy; cancer; gene therapy;
KW inflammatory reaction; dg.
XX
OS Canis sp.
XX
PN WO2001111049-A2.
XX
PD 15-FEB-2001.
XX
PF 09-AUG-2000; 2000WO-US021651.
XX
PR 10-AUG-1999; 99US-0371615.
XX
PA (IDEX-) IDEXX LAB INC.
XX
PI Guo H, Lawton R, Mermer B, Aiyappa AP;
XX
DR WPI; 2001-191542/19.
XX
PT Novel canine interleukin 5 polynucleotide and polypeptides are used for
PT generating antibodies which are useful in treating allergies in dogs.

RESULT 10
AAT50756
ID AAT50756 standard; cDNA; 399 BP.
XX
AC AAT50756;
XX
DT 17-OCT-2003 (revised)
DT 24-SEP-1997 (first entry)
XX
DE Ovine IL-5 cDNA.
XX
KW Cytokine; ovine; sheep; interleukin-5; interleukin-12; IL-5; IL-12;
KW livestock; cow; stress; transport; vaccine adjuvant; Veterinary; cancer;
KW immunosuppression; allergy; reproductive system; growth; early maturity;
KW antibody; diagnosis; immunopotentiator;
KW early haematopoietic progenitor cell; cytotoxic cell; thymocyte;
KW secretion; IgM; IgA; bacterial endotoxin; gamma-interferon; ss.
XX
OS Ovis aries.
XX
PN WO9700321-A1.
XX
PD 03-JAN-1997.
XX
PF 14-JUN-1996; 96WO-AU000360.
XX
PR 14-JUN-1995; 95AU-00003502.
PR 27-OCT-1995; 95AU-00006244.
XX
PA (CSIR) COMMONWEALTH SCI & IND RES ORG.
XX
PI Seow H, Wood P;
XX
DR WPI; 1997-077528/07;
DR P-PSDB; AAW08479.
XX
PT Nucleic acid encoding ovine interleukin-5 or -12 - used as vaccine
PT adjuvants and to treat or prevent microbial infections in livestock.

PS   Claim 6; Page 41-42; 78pp; English.
XX
CC   The sequences given in AAT50755-56 encode ovine interleukin-5 (IL-5).
CC   Ovine IL-5 or IL-12 are used to treat and/or prevent infections in
CC   livestock (esp. cows and sheep), particularly where the animals are
CC   stressed, e.g. during transport. IL-5 and IL-12 can also be used as
CC   adjuvants in vaccines for veterinary use (partic. weakly immunogenic
CC   subunit or synthetic peptide vaccines). They may also be used to treat
CC   cancer, immunosuppression and allergy, to enhance/suppress the
CC   reproductive system and to promote growth or early maturity. Optionally
CC   interleukin can be delivered from constructs or delivery cells and
CC   antibodies are useful in enzyme immunoassays for rapid diagnosis of
CC   infection. The interleukins are immunopotentiators, especially IL-5
CC   induces production of gamma-interferon by, and proliferation of, T and NK
CC   cells and increases the (non-)specific cytolytic lymphocyte response. The
CC   genetic constructs can also be used for in vitro production of IL-5 or -
CC   12. (Updated on 17-OCT-2003 to standardise OS field)
XX
SQ   Sequence 399 BP; 130 A; 77 C; 93 G; 99 T; 0 U; 0 Other;

Query Match   79.7%; Score 274.8; DB 2; Length 399;
Best Local Similarity   87.7%;
Matches 300; Conservative   0; Mismatches   42; Indels   0; Gaps   0;

Qy   3 TGCTGTAGAAAAATCCCATGAATAGACTGGTCTGGCAGAGACCTTGACACTGCTCCACTCA 62
             ||||||||||||||||||||||||||||||||||||||| || || ||| || ||||||||
Db   54 TGCTGTAGAAAGTACCATGAATAGACTGGTGGCAGAGACCCTTGACACTGCTCTCCACGCA 113

Qy   63 TCGAACTTGGCTGATAGGCCGATGGGAGAACCTGACTGATCTCCTACTCCTGAAAATAAATCA 122
             ||| | |||||||||||||||||||||||||||||||| || || ||||||||||||||||
Db   114 TCAAACTCTCTGATAGGTCAGGTGGAACTTGATGAATCCCTACTCCTCAGCATACAAAATCA 173

Qy   123 CCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAAGAACCAAAACTGCCCA 182
             ||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   174 CCAACTATGCATTGAAGAAGTCTTTCAGGGAATAGACACATTGAAGAATCAAAACTGCACA 233

Qy   183 CGGGGAGGGCTGTGGATAAACTATTTCAAAACTTGTCTTTAATAAAAGAACACATAGAGCG 242
             | ||||||||||||||||| ||| |||||||||||||||||||||||||||||||||||
Db   234 AGGGGATGCCTGTGAAAAAATATTCCGAACAACTGTCTTTAATAAAAGAATACATAGACCT 293

Qy   243 CCAAAAAAAAAAGGTGTGCAGGAGAAGATGAGAGAGTGACAAAGTTCCTAGACTACCTGCA 302
             || |||||||||||||||||||||| || || |||||||||||| ||| || ||||||||
Db   294 CCAAAAAAGGAGAGTGTGGGAGGAGGAGAGTGAAACAAATTCCTCGACTACCTGCA 353

Qy   303 AGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAG 344
             || ||||| ||| |||||||||||| ||||||| ||||||
Db   354 AGTTTTCCTTGGTGTGATAAACACAGAGTGGACGATGGAAAG 395

RESULT 11
AAT50755
ID   AAT50755 standard; DNA; 520 BP.
XX
AC   AAT50755;
XX
DT   17-OCT-2003 (revised)
DT   24-SEP-1997 (first entry)
XX
DE   Ovine IL-5 gene.
XX
KW   Cytokine; ovine; sheep; interleukin-5; interleukin-12; IL-5; IL-12;
KW   livestock; cow; stress; transport; vaccine adjuvant; veterinary; cancer;
KW   immunosuppression; allergy; reproductive system; growth; early maturity;
KW   antibody; diagnosis; immunopotentiator;
KW   early haematopoietic progenitor cell; cytotoxic cell; thymocyte;
KW   secretion; IgM; IgA; bacterial endotoxin; gamma-interferon; ss.
XX
OS   Ovis aries.
XX
FH   Key   Location/Qualifiers

FT   CDS   46..444
FT   /*tag= a
FT   /product= "Ovine_IL-5"
FT   exon   46..183
FT   /*tag= b
FT   /number= 1
FT   exon   184..216
FT   /*tag= c
FT   /number= 2
FT   exon   217..345
FT   /*tag= d
FT   /number= 3
FT   exon   346..480
FT   /*tag= e
FT   /number= 4
XX
PI   Seow H; Wood P;
XX
DR   WPI; 1997-077528/07.
DR   P-PSDB; AAW08479.
XX
PA   (CSIR) COMMONWEALTH SCI & IND RES ORG.
XX
PN   WO9703321-A1.
XX
PD   14-JUN-1996;   96WO-AU000360.
XX
PR   03-JAN-1997.
XX
PR   14-JUN-1995;   95AU-000035502.
PR   27-OCT-1995;   95AU-000062244.
XX
PT   Nucleic acid encoding ovine interleukin-5 or -12 - used as vaccine
PT   adjuvants and to treat or prevent microbial infections in livestock.
XX
PS   Claim 6; Page 39-40; 78pp; English.
XX
CC   The sequences given in AAT50755-56 encode ovine interleukin-5 (IL-5).
CC   Ovine IL-5 or IL-12 are used to treat and/or prevent infections in
CC   livestock (esp. cows and sheep), particularly where the animals are
CC   stressed, e.g. during transport. IL-5 and IL-12 can also be used as
CC   adjuvants in vaccines for veterinary use (partic. weakly immunogenic
CC   subunit or synthetic peptide vaccines). They may also be used to treat
CC   cancer, immunosuppression and allergy, to enhance/suppress the
CC   reproductive system and to promote growth or early maturity. Optionally
CC   interleukin can be delivered from constructs or delivery cells and
CC   antibodies are useful in enzyme immunoassays for rapid diagnosis of
CC   infection. The interleukins are immunopotentiators, especially IL-5
CC   induces production of gamma-interferon by, and proliferation of, T and NK
CC   cells and increases the (non-)specific cytolytic lymphocyte response. The
CC   genetic constructs can also be used for in vitro production of IL-5 or -
CC   12. (Updated on 17-OCT-2003 to standardise OS field)
XX
SQ   Sequence 520 BP; 166 A; 99 C; 124 G; 131 T; 0 U; 0 Other;

Query Match   79.7%; Score 274.8; DB 2; Length 520;
Best Local Similarity   87.7%;
Matches 300; Conservative   0; Mismatches   42; Indels   0; Gaps   0;

Qy   3 TGCTGTAGAAAATCCCATGAATAGACTGGTCTGGCAGAGACCTTGACACTGCTCCACTCA 62
             ||||||||||||||||||||||||||||||||||||||| || || ||| || ||||||||
Db   99 TGCTGTAGAAAGTACCATGAATAGACTGGTGGCAGAGACCCTTGACACTGCTCTCCACGCA 158

Qy   63 TCGAACTTGGCTGATAGGCCGATGGGAGAACCTGACTGATCTCCTACTCCTGAAAATAAATCA 122
             ||| | |||||||||||||||||||||||||||||||| || || ||||||||||||||||
Db   159 TCAAACTCTGCTGATAGGTCAGGTGGAACTTGATGAATCCCTACTCCTCAGCATACAAAATCA 218

Qy   123 CCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAAGAACCAAAACTGCCCA 182
             ||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   219 CCAACTATGCATTGAAGAAGTCTTTCAGGGAATAGACACATTGAAGAATCAAAACTGCACA 278

```
Qy    183 CGGGGAGGGCTGTGGGATAAACTTGTGTCTTTAATAAAAGAACACATAGAGCG 242
              ||||||  |||||  ||| |||||||||||||||||||||||||||||||||||||
Db    279 AGGGGATGGCGTGTGAAAAAATATTCCGAAACTTGTCTTTAATAAAAGAATAGACATAGACCT 338

Qy    243 CCAAAAAAAAGGGTGTGCAGGAGAAAAGATGGAGAAGTTGCTAGACTACCTGCA 302
              ||||||||||  ||||  ||| ||||||||||||||||||||||||||||||||
Db    339 CCAAAAAAGGAAGTGTGGGACGAGAGAGTGAAAACAATTCCTCGACTACCTGCA 398

Qy    303 AGTATTTCTTGGTGTTAATAAAACACCGAGTGGGACCACGGAAAG 344
              ||||| |||||||||| |||  |||||||||  |||||||||||
Db    399 AGTTTTCCTTGGTGTGATAAACACACAGAGTGGACGATGGGAAAG 440
```

RESULT 12

```
AAA34857
ID    AAA34857 standard; DNA; 816 BP.
XX
AC    AAA34857;
XX
DT    28-JUL-2000 (first entry)
XX
DE    Human adenosine receptor related polynucleotide SEQ ID NO:2546.
XX
KW    Human; adenosine receptor; low adenosine antisense oligonucleotide;
KW    phosphorothioate; impaired respiration; inflammation; allergy;
KW    allergic disease; bronchoconstriction; inhibitor; antiinflammatory;
KW    antiallergic; antiasthmatic; cytostatic; analgesic; impaired airway;
KW    lung disease; ischaemic condition; pulmonary vasoconstriction; asthma;
KW    respiratory distress syndrome; pain; cystic fibrosis; emphysema;
KW    pulmonary hypertension; chronic obstructive pulmonary disease; COPD;
KW    cancer; leukaemia; lymphoma; carcinoma; metastasis; ss.
XX
OS    Homo sapiens.
XX
```

Db

```
Qy
Db

Qy
Db
```

```
CC    nucleotide sequences given in the sequence listing from the present
CC    invention, which correspond to SEQ ID NO:1 to 2815, and then the last 185
CC    sequences are also called SEQ ID NO:1 to 185, but the sequences differ
CC    from the previously named sequences. SEQ ID NO:11 to 1680 (AAA12323 to
CC    AAA33992) are specifically claimed ONs from the present invention. N.B.
CC    Sequences given in the disclosure of the present invention do not match
CC    up with their corresponding SEQ ID NO: sequences given in the sequence
CC    listing
XX
SQ    Sequence 816 BP; 277 A; 137 C; 164 G; 238 T; 0 U; 0 Other;
```

Query Match　　67.1%;　　Score 231.4;　　DB 3;　Length 816;
Best Local Similarity　　80.4%;　Pred. No. 7.6e-59;
Matches 271; Conservative　0; Mismatches 66; Indels　0; Gaps　0;

```
Qy      9 AGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTTCCACTCATCATCGAAC 68
             ||||||||||||||||||||||||||||||||||| || |||| ||||||||||||| |||
Db    110 AGAAATTCCCACACAGTGCATTGGTGAAAAGAGACCTTGGCACTGCTTTCTACTCATCGAAC 169

Qy     69 TTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAATCACCAACT 128
             || ||||| ||| ||||||||||||||| ||||||| ||| ||||||| || ||||||
Db    170 TCTGCCTGATAGCCAATGAGCTCTGAGGACTCTGAGGATTCCTGTTCCGTACATAAAATCACCAACT 229

Qy    129 GTGCATTAAGAAAGTTTTTTCAGGGGTATAGCACACATTGAGAGAAACAAAACTCCCACGGGGA 188
             ||||||||||||||||||||| ||||  ||| | ||||||||||||||||||||||||||||
Db    230 GTGCACTGAAGAAAATCTTTCAGGGAATAGGCCACTGAGAGGTCAAAACTGTGCCAAGGGGG 289

Qy    189 GGCTGTGGGATAAACTATTCCAAAACTGTCTTTAATAAAAGAACACATAGAGCGCCAAAA 248
             ||||||||||||||||||||| ||||||  |||||||||||| ||||||||| ||||||
Db    290 TACTCTGTGGAAAGACTATTCAAAAACTTGTCTTTAATAAAAGAAATACATTGACGGGCCAAA 349

Qy    249 AAAAAGGTGTGCAGGAGAAGAGATGGAGAAGTTCCTAGACTACCTGCCAAGTATT 308
             ||||| |||| |||| |||| ||||||||| |||||||||||||||| ||||||
Db    350 AAAAAAGTGTGGGACGAGAGAGACCGAGAGTAAACCAATTCCTAGACTACCTGCAAGAGTT 409
```

RESULT 13

```
AAA13338
ID    AAA13338 standard; cDNA; 816 BP.
XX
AC    AAA13338;
XX
DT    25-JUL-2000 (first entry)
XX
DE    Human interleukin-5 nucleotide sequence.
XX
KW    Human; interleukin-5; IL-5; inflammatory disease; asthma; eczema;
KW    antisense oligonucleotide; allergic rhinitis; inflammatory skin disease;
KW    allergic conjunctivitis; inhibitor; ss.
XX
OS    Homo sapiens.
XX
PN    US6048726-A.
XX
PD    11-APR-2000.
XX
```

```
Qy    303 AGTATTTCTTGGTGTTAATAAAACACCGAGTGGGACCACGGAAAG 344
```

```
Qy
Db
```

```
Qy    309 TCTTGGTGTTAATAAAACACCGAGTGGACACCGGAAGT 345
             ||||| ||||| ||||| |||||||||||||||||| |
Db    410 TCTTGGTGTAATGAACACCGAGTGGGATAATAGAAAGT 446
```

```
Qy
Db
```

```
PF    03-AUG-1999;　99WO-US017712.
XX
PR    03-AUG-1998;　98US-0095212P.
XX
PA    (UYEC-) UNIV EAST CAROLINA.
XX
PI    Nyce JW;
XX
DR    WPI; 2000-205971/18.
```

```
PF    15-MAY-1998;　98US-00079839.
XX
PR    15-MAY-1998;　98US-00079839.
XX
PA    (WELT/) WELTMAN J K.
PA    (KARI/) KARIM A S.
XX
PI    Weltman JK, Karim AS;
XX
DR    WPI; 2000-302784/26.
XX
PT    Oligonucleotide comprising non-natural internucleoside linkage, useful
PT    for inhibiting interleukin-5 expression and treating inflammatory
```

```
PD    24-FEB-2000.
XX
PN    WO2000009525-A2.
XX
OS    Homo sapiens.
XX
Db

Qy
Db

PS    Disclosure; Page 716; 1343pp; English.
XX
PT    The present invention describes a new composition comprising an antisense
CC    oligonucleotide (ON) with low adenosine (up to 15%), which targets
CC    nucleic acids involved in bronchoconstriction, allergies, and/or
CC    inflammation. The ON can have antinflammatory, antiallergic,
CC    antiasthmatic, cytostatic and analgesic activities. The compositions are
CC    useful for the treatment of diseases associated with inflammation,
CC    impaired airways, including lung disease and diseases whose secondary
CC    effects afflict the lungs of a subject. They can be used for treating
CC    e.g. ischaemic conditions, pulmonary vasoconstriction, allergies, asthma,
CC    impeded respiration, respiratory distress syndrome, pain, cystic
CC    fibrosis, pulmonary hypertension, emphysema, chronic obstructive
CC    pulmonary disease (COPD), and cancers which may metastasise to the lungs,
CC    e.g. ischaemic conditions, pulmonary vasoconstriction, allergies, asthma,
CC    carcinomas, and cancers such as leukaemias, lymphomas,
CC    breast and prostate cancer. The reduction of the adenosine content of the
CC    ONs reduces side effects. The A-containing ONs break down with the
CC    release of deoxyadenosine which activates adenosine receptors causing
CC    bronchoconstriction and inflammation. AAA32313 to AAA35512 represent the
```

New antisense oligonucleotides useful for treating e.g. pulmonary
vasoconstruction, inflammation, allergies, asthma, hypertension,
bronchitis, emphysema, respiratory distress syndrome, ischemia or
cancers.

PT diseases, asthma, allergic rhinitis, allergic conjunctivitis.
XX
PS Disclosure; Col 3-4; 11pp; English.
XX
CC This sequence represents the human interleukin-5 (IL-5) encoding
CC nucleotide sequence. Interleukin-5 is involved in eosinophilic
CC inflammation and inflammatory disorders. The present invention relates to
CC an IL-5 antisense oligonucleotide (see AAA13337) which inhibits the
CC expression of IL-5. The antisense oligonucleotide has at least one non-
CC natural internucleoside linkage. The oligonucleotide is able to inhibit
CC IL-5 secretion in a dose dependent manner, and is useful for inhibiting
CC IL-5 expression and therefore treating inflammatory diseases, asthma,
CC allergic rhinitis, allergic conjunctivitis and inflammatory skin diseases
CC such as eczema
XX
SQ Sequence 816 BP; 277 A; 137 C; 164 G; 238 T; 0 U; 0 Other;

Query Match   67.1%; Score 231.4; DB 3; Length 816;
Best Local Similarity   80.4%; Pred. No. 7.6e-59;
Matches 271; Conservative   0; Mismatches   66; Indels   0; Gaps   0;

Qy   9 AGAAAATCCCATGAATAGACTGGTGGCAGAGACTTGCACTGCTCTCCACTCATCGAAC 68
            ||||| |||| ||||||||||||||||||||||||||| |||||||||||||||||
Db   110 AGAAATTCCCACAAGTGCATTGGTGAAAGAGACCTTGGCACTGCTTTCTACTCATCGAAC 169

Qy   69 TTGGCTGATAGGCGATGGGGAACCCTGATGATTCCTACTCCTGAAAATAAAAAATCACCAACT 128
            ||||||||||||||||||||||||| ||||||| ||| ||||| |||| | |||||||||||
Db   170 TCTGCTGATAGGCCAATGAGACTCTGAGGATTCCTGTTCCTGTACATAAAAATCACCAACT 229

Qy   129 GTGCATTAAAGAAGTTTTTCAGGGTATAGACACCATTGAAGAACCAAACTGCCCACGGGGA 188
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   230 GTGCACTGAAGAAAATCTTTCAGGGAATAGGCACACTCGGAGAGTCAAACTGTGCAAGGGGG 289

Qy   189 GGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGGCGCCAAAA 248
            ||||||| ||||||||||||||||||||| ||||||||||||||||| |||||||||||||
Db   290 TACTGTGGAAAGACTATTCCTTAATAAAAGAAATACATTGACGGCGCCAAA 349

Qy   249 AAAAAGGTGTGCAGGAGGAAAGATGGAAGAGAGTGACAAAAGTTCCTAGACTACCTGCAAGTATT 308
            ||||||||||||||||||||||||||||||||||||||||||||||| |||||||||||||
Db   350 AAAAAGTGTGGAGAAGAAAGCAGGAGAGTAAACCAATTCCTAGACTACCTGCAAGAGTT 409

Qy   309 TCTTGGTGTAATAAAACACCGAGTGGGATGGGACACCGGAAAGT 345
            |||||| ||||||||||||||||||||||||||||||||||||
Db   410 TCTTGGTGTAATGAACACACCGAGTGGGATGGATAATAGAAAGT 446

XX

RESULT 14
AAF20979
ID AAF20979 standard; DNA; 816 BP.
XX
AC AAF20979;
XX
DT 14-MAR-2001 (first entry)
XX
DE Human low adenosine antisense oligonucleotide related sequence #2546.
XX
KW Low adenosine antisense oligonucleotide; phosphorothioate; allergy;
KW human; airway disorder; bronchoconstriction; lung inflammation;
KW surfactant depletion; respiratory; bronchodilator; antiinflammatory;
KW immunosuppressive; antiasthmatic; analgesic; hypotensive; cytostatic;
KW respiratory obstruction; pulmonary obstruction; impeded respiration;
KW surfactant hypoproduction; pulmonary vasoconstriction; asthma; RDS;
KW respiratory distress syndrome; pain; cystic fibrosis; allergic rhinitis;
KW pulmonary hypertension; emphysema; pulmonary transplantation rejection;
KW chronic obstructive pulmonary disease; pulmonary infection; bronchitis;
KW cancer; ss.
XX
OS Homo sapiens.
XX
PN WO2006062736-A2.
XX
PD 26-OCT-2000.
XX

PF 24-MAR-2000.; 2000WO-US008020.
XX
PR 06-APR-1999.; 99US-0127958P.
XX
PA (UYEC-) UNIV EAST CAROLINA.
PA (NYCE/) NYCE J W.
XX
PI Nyce JW;
XX
DR WPI; 2000-679539/66.
XX
PT Low adenosine (A) content antisense oligonucleotides which do not trigger
PT adenosine receptors during metabolism, useful e.g. for treating cancers
PT and respiratory obstructions.
XX
PS Disclosure; Page 788; 1592pp; English.
XX
CC The present invention describes low adenosine (A) content antisense
CC oligonucleotides and compositions (I) comprising them. In the antisense
CC oligonucleotides the A is replaced by a 'Universal' or alternative base.
CC (I) can have respiratory, bronchodilator, antiinflammatory, analgesic,
CC immunosuppressive, antiasthmatic, hypotensive and cytostatic activities.
CC The antisense oligonucleotides and (I) can be used to down-regulate the
CC expression and or activity of target polypeptides associated with
CC lung/respiratory disorders and malignancies, such as stimulating and
CC activating peptide factors and transmitters, transcription factors,
CC immunoglobulins and antibodies, antibody receptors, cytokines and
CC chemokines, endogenously produced specific and non-specific enzymes,
CC binding proteins, adhesion molecules and their receptors, cytokine and
CC chemokine receptors, adenosine receptors, bradykinin receptor, central
CC nervous system (CNS) and peripheral nervous and non-nervous system
CC receptors, CNS and peripheral nervous and non-nervous system peptide
CC transmitters, defensins, growth factors, vasoactive peptides and
CC receptors, binding proteins and malignancy associated proteins. The
CC antisense oligonucleotides may be used in this way to treat disorders
CC including respiratory obstruction (especially pulmonary obstruction
CC and/or bronchoconstriction) and/or lung inflammation, allergy(ies) and/or
CC surfactant hypoproduction which are associated with a disease or
CC condition selected from pulmonary vasoconstriction, inflammation,
CC allergies, asthma, impeded respiration, respiratory distress syndrome
CC (RDS), pain, cystic fibrosis (CF), allergic rhinitis (AR), pulmonary
CC hypertension, emphysema, chronic obstructive pulmonary disease (COPD),
CC pulmonary transplantation rejection, pulmonary infections, bronchitis,
CC and/or cancer. AAF18434 to AAF21543 represent human polynucleotide
CC fragments and antisense oligonucleotides used in the exemplification of
CC the present invention
XX
SQ Sequence 816 BP; 277 A; 137 C; 164 G; 238 T; 0 U; 0 Other;

Query Match   67.1%; Score 231.4; DB 3; Length 816;
Best Local Similarity   80.4%; Pred. No. 7.6e-59;
Matches 271; Conservative   0; Mismatches   66; Indels   0; Gaps   0;

Qy   9 AGAAAATCCCATGAATAGACTGGTGGCAGAGACTTGCACTGCTCTCCACTCATCGAAC 68
            ||||| |||| ||||||||||||||||||||||||||| |||||||||||||||||
Db   110 AGAAATTCCCACAAGTGCATTGGTGAAAGAGACCTTGGCACTGCTTTCTACTCATCGAAC 169

Qy   69 TTGGCTGATAGGCGATGGGGAACCCTGATGATTCCTACTCCTGAAAATAAAAAATCACCAACT 128
            ||||||||||||||||||||||||| ||||||| ||| ||||| |||| | |||||||||||
Db   170 TCTGCTGATAGGCCAATGAGACTCTGAGGATTCCTGTTCCTGTACATAAAAATCACCAACT 229

Qy   129 GTGCATTAAAGAAGTTTTTCAGGGTATAGACACCATTGAAGAACCAAACTGCCCACGGGGA 188
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   230 GTGCACTGAAGAAAATCTTTCAGGGAATAGGCACACTCGGAGAGTCAAACTGTGCAAGGGGG 289

Qy   189 GGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGGCGCCAAAA 248
            ||||||| ||||||||||||||||||||| ||||||||||||||||| |||||||||||||
Db   290 TACTGTGGAAAGACTATTCCTTAATAAAAGAAATACATTGACGGCGCCAAA 349

Qy   249 AAAAAGGTGTGCAGGAGGAAAGATGGAAGAGAGTGACAAAAGTTCCTAGACTACCTGCAAGTATT 308
            ||||||||||||||||||||||||||||||||||||||||||||||| |||||||||||||
Db   350 AAAAAGTGTGGAGAAGAAAGCAGGAGAGTAAACCAATTCCTAGACTACCTGCAAGAGTT 409

```
Qy        309 TCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
              ||||||||||||||||  |||||||||||| |||||||
Db        410 TCTTGGTGTAATGAACACCGGAGTGGATAATAGAAAGT 446
```

RESULT 15

ID   ADG33104 standard; DNA; 816 BP.
XX
AC   ADG33104;
XX
DT   26-FEB-2004 (first entry)
XX
DE   Human DNA differentially expressed in patients with SLE SeqID428.
XX
KW   diverticulitis; primary biliary sclerosis.
KW   ulcerative colitis; primary sclerosing cholangitis; appendicitis;
KW   Sjogren's disease; CREST syndrome; scleroderma; ankylosing spondylitis;
KW   systemic lupus erythematosis; rheumatoid arthritis; cholecystitis;
KW   human; ds; autoimmune; chronic inflammatory disease; SLE;
XX
OS   Homo sapiens.
XX
XX
PN   WO200309O694-A2.
XX
PD   06-NOV-2003.
XX
PF   24-APR-2003; 2003WO-US013015.
XX
PR   24-APR-2002; 2002US-00131827.
XX
PA   (EXPR-) EXPRESSION DIAGNOSTICS INC.
XX
PI   Wohlgemuth J, Fry K, Woodward R, Ly N;
XX
DR   WPI; 2003-872243/81.
XX
PT   Diagnosing or monitoring autoimmune and chronic inflammatory diseases,
PT   such as rheumatoid arthritis, systemic lupus erythematosus, ulcerative
PT   colitis, psoriasis and asthma by detecting the expression level of one or
PT   more genes.
XX
PS   Claim 18; SEQ ID NO 428; 877pp; English.
XX
CC   This invention relates to novel methods for diagnosing and monitoring
CC   autoimmune and chronic inflammatory diseases. Specifically, it refers to
CC   the identification of genes that have a clinical utility as diagnostic
CC   tools for the management of, in particular, patients with systemic lupus
CC   erythematosis (SLE) or rheumatoid arthritis (RA). Accordingly, the
CC   present invention describes a method for determining the levels of
CC   multiple differentially expressed genes of a patient, in a concerted
CC   manner, in order to achieve an improved diagnostic assay with sensitivity
CC   and specificity for the disease in question. As such, these genes are
CC   useful for the diagnosis of various other inflammatory disorders
CC   including cholecystitis, Sjogren's disease, CREST syndrome, scleroderma,
CC   ankylosing spondylitis, ulcerative colitis, primary sclerosing
CC   cholangitis, appendicitis, diverticulitis, and primary biliary sclerosis.
CC   This polynucleotide is a DNA sequence representing human mRNA that is
CC   differentially expressed in patients with SLE, used in an exemplification
CC   of the invention.
XX
SQ   Sequence 816 BP; 276 A; 137 C; 165 G; 238 T; 0 U; 0 Other;

Query Match 67.1%; Score 231.4; DB 10; Length 816;
Best Local Similarity 80.4%; Pred. No. 7.6e-59;
Matches 271; Conservative 0; Mismatches 66; Indels 0; Gaps 0;

```
Qy        9 AGAAAATCCCATGAATAGACTGGGTGGCGAGAGACCTTGACACTGCTCTCCACTCATCGAAC 68
            |||||| ||||| | ||| |||  | || |||||||||||||||||| || |||||||||||
Db      110 AGAAATTCCCACAAGTGCATTGGTGTGAAAGAGACCTTGGCACTGCTTTTCTACTCATCGAAC 169

Qy       69 TTGGCTGATAGGCGATGGGGAACCTGACTTCCTACTCCTCGAAATATAAAAAATCACCAACT 128
            ||||||| |  ||  |  ||||||||| ||||| ||| | | |  |||||||| ||||||||
Db      410 TCTTGGTGTAATGAACACCGGAGTGGATAATAGAAAGT 446
```

Db   170 TCTGCTGATAGCCAATGAGACTCTGAGGATTCCTGTTCCTGTACATAAAAATCACCAACT 229
Qy   129 GTGCAATTAAAGAAGAGTTTTTCAGGGTTATAGACACATTGAAGAACACCAAACTGCCCACGGGGGA 188
Db   230 GTGCACTGAAGAAATCTTTCAGGGAGAATAGGCACACTGGGAGTCAAACTGTGCAAGGGGG 289
Qy   189 GGCTGTGGATAAACTAATCCAAAACTGTGTCTTTAATAAAAGAAACCATTAGGAGGCGGCCAAAA 248
Db   249 TACTGTGGAAAGACTAATTCAAAAACTTGTCCTTAATAAAAGAAAATACACATTGACGGCCAAAA 308
Qy   249 AAAAAGGTGTGCAGGAGAAAAGATGGAGAGTGACAAAAGTTCCTAGACTACCTGCAAGTATT 308
Db   350 AAAAAAGTGTTGGAGAAGACCGGGAAGACGGGAGAGTAAACCAATTCCTAGACTACCTGCAAGAGTT 409
Qy   309 TCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
Db   410 TCTTGGTGTAATGAACACCGGAGTGGATAATAGAAAGT 446

Search completed: August 8, 2005, 09:19:50
Job time : 231.259 secs

OM nucleic - nucleic search, using sw model

GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

Run on: August 7, 2005, 09:34:25 ; Search time 286.184 Seconds
                                          (without alignments)
                                          7814.559 Million cell updates/sec

Title: US-10-787-382-9
Perfect score: 345
Sequence: 1 tttgctgtagaaaatcccat..........ccgagtggaccacggaaagt 345
Scoring table: IDENTITY NUC
                Gapop 10.0 , Gapext 1.0
Searched: 7297361 seqs, 3241162794 residues
Total number of hits satisfying chosen parameters: 14594722

Post-processing: Minimum Match 0%
                 Maximum Match 100%
                 Listing first 45 summaries

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Database :
    Published Applications NA:*
    1: /cgn2_6/ptodata/2/pubpna/US07_PUBCOMB.seq:*
    2: /cgn2_6/ptodata/2/pubpna/US09B_PUBCOMB.seq:*
    3: /cgn2_6/ptodata/2/pubpna/PCT_NEW_PUB.seq:*
    4: /cgn2_6/ptodata/2/pubpna/US06_NEW_PUB.seq:*
    5: /cgn2_6/ptodata/2/pubpna/US06_PUBCOMB.seq:*
    6: /cgn2_6/ptodata/2/pubpna/US07_PUBCOMB.seq:*
    7: /cgn2_6/ptodata/2/pubpna/PCTUS_PUBCOMB.seq:*
    8: /cgn2_6/ptodata/2/pubpna/US08_NEW_PUB.seq:*
    9: /cgn2_6/ptodata/2/pubpna/US09A_PUBCOMB.seq:*
    10: /cgn2_6/ptodata/2/pubpna/US09B_PUBCOMB.seq:*
    11: /cgn2_6/ptodata/2/pubpna/US09C_PUBCOMB.seq:*
    12: /cgn2_6/ptodata/2/pubpna/US09_NEW_PUB.seq:*
    13: /cgn2_6/ptodata/2/pubpna/US10A_PUBCOMB.seq:*
    14: /cgn2_6/ptodata/2/pubpna/US10C_PUBCOMB.seq:*
    15: /cgn2_6/ptodata/2/pubpna/US10D_PUBCOMB.seq:*
    16: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
    17: /cgn2_6/ptodata/2/pubpna/US10F_PUBCOMB.seq:*
    18: /cgn2_6/ptodata/2/pubpna/US10G_PUBCOMB.seq:*
    19: /cgn2_6/ptodata/2/pubpna/US10H_PUBCOMB.seq:*
    20: /cgn2_6/ptodata/2/pubpna/US10I_PUBCOMB.seq:*
    21: /cgn2_6/ptodata/2/pubpna/US10J_PUBCOMB.seq:*
    22: /cgn2_6/ptodata/2/pubpna/US10_NEW_PUB.seq:*
    23: /cgn2_6/ptodata/2/pubpna/US11A_PUBCOMB.seq:*
    24: /cgn2_6/ptodata/2/pubpna/US11_NEW_PUB.seq:*
    25: /cgn2_6/ptodata/2/pubpna/US60_NEW_PUB.seq:*
    26: /cgn2_6/ptodata/2/pubpna/US60_PUBCOMB.seq:*

                        SUMMARIES

Result
No.   Score Query   Match Length DB ID   Description
              %
  1   345   100.0   345   9   US-09-755-633-9   Sequence 9, Appli
  2   345   100.0   345   9   US-09-755-633-9   Sequence 11, Appl
  3   345   100.0   345   14   US-10-218-654-85   Sequence 85, Appl
  4   345   100.0   345   14   US-10-218-654-87   Sequence 87, Appl
c 5   345   100.0   345   15   US-10-262-439-85   Sequence 85, Appl
c 6   345   100.0   345   15   US-10-262-439-87   Sequence 87, Appl
c 7   345   100.0   345   19   US-10-787-382-9   Sequence 9, Appli

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

c 8   345   100.0   345   19   US-10-787-382-11   Sequence 11, Appl
   9   345   100.0   402   9   US-09-755-633-7   Sequence 7, Appli
c 10   345   100.0   402   9   US-09-755-633-8   Sequence 8, Appli
   11   345   100.0   402   14   US-10-218-654-83   Sequence 83, Appl
   12   345   100.0   402   14   US-10-218-654-84   Sequence 84, Appl
   13   345   100.0   402   14   US-10-262-439-83   Sequence 83, Appl
   14   345   100.0   402   15   US-10-262-439-84   Sequence 84, Appl
   15   345   100.0   402   19   US-10-787-382-7   Sequence 7, Appli
c 16   345   100.0   402   19   US-10-787-382-8   Sequence 8, Appli
   17   345   100.0   610   9   US-09-755-633-6   Sequence 6, Appli
c 18   345   100.0   610   14   US-10-218-654-80   Sequence 80, Appl
   19   345   100.0   610   14   US-10-218-654-82   Sequence 82, Appl
   20   345   100.0   610   15   US-10-262-439-80   Sequence 80, Appl
c 21   345   100.0   610   15   US-10-262-439-82   Sequence 82, Appl
   22   345   100.0   610   19   US-10-787-382-4   Sequence 4, Appli
   23   345   100.0   610   19   US-10-787-382-6   Sequence 6, Appli
c 24   345   100.0   610   19   US-09-755-633-21   Sequence 21, Appl
   25   259   75.1   671   9   US-09-755-633-21   Sequence 21, Appl
   26   259   75.1   459   22   US-10-787-382-21   Sequence 21, Appl
   27   231.4 67.1   816   22   US-10-880-101A-85   Sequence 85, Appl
   28   231.4 67.1   816   17   US-10-191-997-90   Sequence 90, Appl
   29   231.4 67.1   816   21   US-10-929-182-4   Sequence 4, Appli
   30   231.4 67.1   816   22   US-10-880-101A-87   Sequence 87, Appl
   31   231.4 67.1   858   16   US-10-295-074-8   Sequence 8, Appli
   32   231.4 67.1   858   16   US-10-295-074-10   Sequence 10, Appl
   33   231.4 67.1   858   20   US-10-846-911-8   Sequence 8, Appli
   34   231.4 67.1   858   20   US-10-846-911-10   Sequence 10, Appl
   35   231.4 67.1   864   16   US-10-295-074-12   Sequence 12, Appl
   36   231.4 67.1   864   16   US-10-295-074-14   Sequence 14, Appl
   37   231.4 67.1   864   20   US-10-846-911-12   Sequence 12, Appl
   38   231.4 67.1   864   20   US-10-846-911-14   Sequence 14, Appl
   39   229.8 66.6   816   18   US-10-641-643-1236   Sequence 1236, Ap
   40   131.6 38.1   1658   9   US-09-755-633-18   Sequence 18, Appl
   41   131.6 38.1   1658   9   US-09-755-633-19   Sequence 19, Appl
c 42   131.6 38.1   1658   19   US-10-787-382-18   Sequence 18, Appl
   43   131.6 38.1   1658   19   US-10-787-382-19   Sequence 19, Appl
c 44   90.5   26.3   6727   9   US-09-800-629A-1   Sequence 1, Appli
   45   90.6   26.3   6727   19   US-10-679-532-1   Sequence 1, Appli

                        ALIGNMENTS

RESULT 1
US-09-755-633-9

; Sequence 9, Application US/09755633
; Patent No. US20020127200A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/09/755,633
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: PatentIn Ver. 2.1
;
; SEQ ID NO 9
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(345)
US-09-755-633-9

Query Match   100.0%; Score 345; DB 9; Length 345;
Best Local Similarity 100.0%; Pred. No. 1.5e-94;

RESULT 2
US-09-755-633-11/c
; Sequence 11, Application US/0975563
; Patent No. US20012127200A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: 09/755,633
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: PatentIn Ver. 2.1
;
; SEQ ID NO 11
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-755-633-11

Query Match   100.0%;   Score 345;   DB 9;   Length 345;
Best Local Similarity   100.0%;   Pred. No. 1.5e-94;
Matches 345;   Conservative   0;   Mismatches   0;   Indels   0;   Gaps   0;

```
Qy      1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCGAGAGACCTTGACACTGCTCTCCACT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    345 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCGAGAGACCTTGACACTGCTCTCCACT 286

Qy     61 CATCGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    285 CATCGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 226

Qy    121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    225 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 166

Qy    181 CACGGGGGAGGCGTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    165 CACGGGGGAGGCGTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 106

Qy    241 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    105 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 46

Qy    301 CAAGTATTTCTTGGTGTTAATAAAACACCGAGTGGACACCGGAAAGT 345
          ||||||||||||||||||||||||||||||||||||||||||||||
Db     45 CAAGTATTTCTTGGTGTTAATAAAACACCGAGTGGACACCGGAAAGT 1
```

RESULT 3
US-10-218-654-85
; Sequence 85, Application US/10218654
; Publication No. US20030099609A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/10/218,654
; CURRENT FILING DATE: 2002-08-13
; PRIOR APPLICATION NUMBER: US/09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 85
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(345)
US-10-218-654-85

Query Match   100.0%;   Score 345;   DB 14;   Length 345;
Best Local Similarity   100.0%;   Pred. No. 1.5e-94;
Matches 345;   Conservative   0;   Mismatches   0;   Indels   0;   Gaps   0;

```
Qy      1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCGAGAGACCTTGACACTGCTCTCCACT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCGAGAGACCTTGACACTGCTCTCCACT 60

Qy     61 CATCGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 CATCGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120

Qy    121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180

Qy    181 CACGGGGGAGGCGTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 CACGGGGGAGGCGTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240

Qy    241 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300

Qy    301 CAAGTATTTCTTGGTGTTAATAAAACACCGAGTGGACACCGGAAAGT 345
          ||||||||||||||||||||||||||||||||||||||||||||||
Db    301 CAAGTATTTCTTGGTGTTAATAAAACACCGAGTGGACACCGGAAAGT 345
```

RESULT 4
US-10-218-654-87/c
; Sequence 87, Application US/10218654
; Publication No. US20030099609A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin

; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/10/218,654
; CURRENT FILING DATE: 2002-08-13
; PRIOR APPLICATION NUMBER: US/09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 87
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
;
US-10-218-654-87

Query Match   100.0%; Score 345; DB 14; Length 345;
Best Local Similarity 100.0%;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy      1 TTTGCTGTAGAAAATCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT  60
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    345 TTTGCTGTAGAAAATCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT 286

Qy     61 CATCGAACTTGGCTGATAGGCGCATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    285 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 226

Qy    121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACAAAACTGCC 180
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    225 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACAAAACTGCC 166

Qy    181 CACGGGGGAGGCGCTGGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    165 CACGGGGGAGGCGTGGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 106

Qy    241 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    105 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 46

Qy    301 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
            |||||||||||||||||||||||||||||||||||||||||||||
Db     45 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAGT 1
```

RESULT 5
US-10-262-439-85
; Sequence 85, Application US/10262439
; Publication No. US20030143196A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/10/262,439
; CURRENT FILING DATE: 2002-09-30
; PRIOR APPLICATION NUMBER: US/09/451,527
; PRIOR FILING DATE: 1999-12-01
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 87
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
;
US-10-262-439-85

Query Match   100.0%; Score 345; DB 15; Length 345;
Best Local Similarity 100.0%;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy      1 TTTGCTGTAGAAAATCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT  60
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 TTTGCTGTAGAAAATCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT 60

Qy     61 CATCGAACTTGGCTGATAGGCGCATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120

Qy    121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACAAAACTGCC 180
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACAAAACTGCC 180

Qy    181 CACGGGGGAGGCGCTGGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 CACGGGGGAGGCGTGGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 240

Qy    241 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 CGCCAAAAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG 300

Qy    301 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
            |||||||||||||||||||||||||||||||||||||||||||||
Db    301 CAAGTATTTCTTGGGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
```

; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(345)
;
US-10-262-439-85

Query Match   100.0%; Score 345; DB 15; Length 345;
Best Local Similarity 100.0%;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

RESULT 6
US-10-262-439-87/c
; Sequence 87, Application US/10262439
; Publication No. US20030143196A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/10/262,439
; CURRENT FILING DATE: 2002-09-30
; PRIOR APPLICATION NUMBER: US/09/451,527
; PRIOR FILING DATE: 1999-12-01
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 87
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
;
US-10-262-439-87

Query Match   100.0%; Score 345; DB 15; Length 345;
Best Local Similarity 100.0%;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy      1 TTTGCTGTAGAAAATCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT  60
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    345 TTTGCTGTAGAAAATCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT 286

Qy     61 CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
```

```
Db   285  CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATCGATTCCTACTCCTGAAAATAAAAT  226
Qy   121  CACCAACTGTGCCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
Db   225  CACCAACTGTGCCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 166
Qy   181  CACGGGGGAGGCGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG  240
Db   165  CACGGGGGAGGCGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG  106
Qy   241  CGCCAAAAAAAAAGGTGTGCAGGAGGAAAGATGGAGGTGACAAAGTTCCTAGACTACCTG   300
Db   105  CGCCAAAAAAAAAGGTGTGCAGGAGGAAAGATGGAGGTGACAAAGTTCCTAGACTACCTG   46
Qy   301  CAAGTATTTTCTTGGTGTAATAAACACCGAGTGGGCACCGGAAAGT  345
Db    45  CAAGTATTTTCTTGGTGTAATAAACACCGAGTGGGCACCGGAAAGT  1
```

RESULT 7
US-10-787-382-9
; Sequence 9, Application US/10787382
; Publication No. US20040191868A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shunin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/10/787,382
; CURRENT FILING DATE: 2004-02-24
; PRIOR APPLICATION NUMBER: 09/755,633
; PRIOR FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: Patentin Ver. 2.1
; SEQ ID NO 9
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(345)
US-10-787-382-9

```
Query Match             100.0%;  Score 345;  DB 19;  Length 345;
Best Local Similarity   100.0%;  Pred. No. 1.5e-94;
Matches  345;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy     1  TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTTCTCCACT  60
Db     1  TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTTCTCCACT  60
Qy    61  CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATCGATTCCTACTCCTGAAAATAAAAT  120
Db    61  CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATCGATTCCTACTCCTGAAAATAAAAT  120
Qy   121  CACCAACTGTGCCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
Db   121  CACCAACTGTGCCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
Qy   181  CACGGGGGAGGCGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG  240
Db   181  CACGGGGGAGGCGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG  240
Qy   241  CGCCAAAAAAAAAGGTGTGCAGGAGGAAAGATGGAGGTGACAAAGTTCCTAGACTACCTG   300
Db   241  CGCCAAAAAAAAAGGTGTGCAGGAGGAAAGATGGAGGTGACAAAGTTCCTAGACTACCTG   300
Qy   301  CAAGTATTTTCTTGGTGTAATAAACACCGAGTGGGCACCGGAAAGT  345
Db   301  CAAGTATTTTCTTGGTGTAATAAACACCGAGTGGGCACCGGAAAGT  345
```

RESULT 8
US-10-787-382-11/c
; Sequence 11, Application US/10787382
; Publication No. US20040191868A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shunin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/10/787,382
; CURRENT FILING DATE: 2004-02-24
; PRIOR APPLICATION NUMBER: 09/755,633
; PRIOR FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: Patentin Ver. 2.1
; SEQ ID NO 11
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-787-382-11

```
Query Match             100.0%;  Score 345;  DB 19;  Length 345;
Best Local Similarity   100.0%;  Pred. No. 1.5e-94;
Matches  345;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy     1  TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTTCTCCACT  60
Db     1  TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTTCTCCACT  60
Qy    61  CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATCGATTCCTACTCCTGAAAATAAAAT  120
Db    61  CATCGAACTTGGCTGATAGGCGGATGGGAACCTGATCGATTCCTACTCCTGAAAATAAAAT  120
Qy   121  CACCAACTGTGCCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
Db   121  CACCAACTGTGCCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 180
Qy   181  CACGGGGGAGGCGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG  240
Db   181  CACGGGGGAGGCGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG  240
Qy   241  CGCCAAAAAAAAAGGTGTGCAGGAGGAAAGATGGAGGTGACAAAGTTCCTAGACTACCTG   300
Db   241  CGCCAAAAAAAAAGGTGTGCAGGAGGAAAGATGGAGGTGACAAAGTTCCTAGACTACCTG   300
Qy   301  CAAGTATTTTCTTGGTGTAATAAACACCGAGTGGGCACCGGAAAGT  345
Db   301  CAAGTATTTTCTTGGTGTAATAAACACCGAGTGGGCACCGGAAAGT  345
```

RESULT 9
US-09-755-633-7
; Sequence 7, Application US/09755633
; Patent No. US2002127200A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shunin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/09/755,633

; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: PatentIn Ver. 2.1
;
; SEQ ID NO 7
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-755-633-7

Query Match   100.0%; Score 345; DB 9; Length 402;
Best Local Similarity 100.0%; Pred. No. 1.7e-94;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy     1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT   60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT  117

Qy    61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAAT  120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   118 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAAT  177

Qy   121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAAGAGACCAAAACTGCC  180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   178 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAAGAGACCAAAACTGCC  237

Qy   181 CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTCTTTAATAAAAGAACACATAGAG  240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   238 CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTCTTTAATAAAAGAACACATAGAG  297

Qy   241 CGCCAAAAAAAAAAGGTGTGCAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   298 CGCCAAAAAAAAAAGGTGTGCAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  357

Qy   301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT  345
         |||||||||||||||||||||||||||||||||||||||||||||
Db   358 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT  402
```

RESULT 10
US-09-755-633-8/c
; Sequence 8, Application US/0975563
; Patent No. US20020127200A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/09/755,633
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: PatentIn Ver. 2.1
;
; SEQ ID NO 8
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-755-633-8

Query Match   100.0%; Score 345; DB 9; Length 402;
Best Local Similarity 100.0%; Pred. No. 1.7e-94;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy     1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT   60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   345 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT  286

Qy    61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAAT  120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   285 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAAT  226

Qy   121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAAGAGACCAAAACTGCC  180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   225 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAAGAGACCAAAACTGCC  166

Qy   181 CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTCTTTAATAAAAGAACACATAGAG  240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   165 CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTCTTTAATAAAAGAACACATAGAG  106

Qy   241 CGCCAAAAAAAAAAGGTGTGCAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   105 CGCCAAAAAAAAAAGGTGTGCAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG   46

Qy   301 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT  345
         |||||||||||||||||||||||||||||||||||||||||||||
Db    45 CAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT    1
```

RESULT 11
US-10-218-654-83
; Sequence 83, Application US/10218654
; Publication No. US20030099609A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/10/218,654
; CURRENT FILING DATE: 2002-08-13
; PRIOR APPLICATION NUMBER: US/09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 83
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-218-654-83

Query Match   100.0%; Score 345; DB 14; Length 402;
Best Local Similarity 100.0%; Pred. No. 1.7e-94;
Matches 345; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy     1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT   60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGTGGCAGAGACCTTGACACTGCTCTCCACT  117

Qy    61 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAAT  120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   118 CATCGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAAT  177

Qy   121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAAGAGACCAAAACTGCC  180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   178 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGGTATAGACACATTGAAGAGACCAAAACTGCC  237

Qy   181 CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTCTTTAATAAAAGAACACATAGAG  240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   238 CACGGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTCTTTAATAAAAGAACACATAGAG  297

Qy   241 CGCCAAAAAAAAAAGGTGTGCAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   298 CGCCAAAAAAAAAAGGTGTGCAGGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTG  357
```

RESULT 12
US-10-218-654-84/c
Sequence 84, Application US/10218654
Publication No. US20030099609A1
GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/10/218,654
; CURRENT FILING DATE: 2002-08-13
; PRIOR APPLICATION NUMBER: US/09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 84
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-218-654-84

Query Match   100.0%;   Score 345;   DB 14;   Length 402;
Best Local Similarity   100.0%;   Pred. No. 1.7e-94;
Matches 345;   Conservative   0;   Mismatches   0;   Indels   0;   Gaps   0;

```
Qy      1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTTCCACT   60
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    345 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTTCCACT  286

Qy     61 CATCGAACTTGGCTGTGATAGGCGATGGGAACCTGATGATTCCTACTCCCTGAAAATAAAAT  120
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    285 CATCGAACTTGGCTGTGATAGGCGATGGGAACCTGATGATTCCTACTCCCTGAAAATAAAAT  226

Qy    121 CACCAAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC  180
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    225 CACCAAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC  166

Qy    181 CACGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG    240
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    165 CACGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG   106

Qy    241 CGCCAAAAAAAAAAGGTGTGCCAGGAGAAACGATGGGAAGCAAAGTTCCTAGACTACCTG   300
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    105 CGCCAAAAAAAAAAGGTGTGCCAGGAGAAACGATGGGAAGCAAAGTTCCTAGACTACCTG    46

Qy    301 CAAGTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCGGAAAGT  345
            |||||||||||||||||||||||||||||||||||||||||||||||
Db     45 CAAGTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCGGAAAGT    1
```

RESULT 13
US-10-262-439-83
Sequence 83, Application US/10262439
Publication No. US20030143196A1
GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/10/262,439

; CURRENT FILING DATE: 2002-09-30
; PRIOR APPLICATION NUMBER: US/09/451,527
; PRIOR FILING DATE: 1999-12-01
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 83
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-262-439-83

Query Match   100.0%;   Score 345;   DB 15;   Length 402;
Best Local Similarity   100.0%;   Pred. No. 1.7e-94;
Matches 345;   Conservative   0;   Mismatches   0;   Indels   0;   Gaps   0;

```
Qy      1 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTTCCACT   60
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     58 TTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTTCCACT  117

Qy     61 CATCGAACTTGGCTGTGATAGGCGATGGGAACCTGATGATTCCTACTCCCTGAAAATAAAAT  120
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    118 CATCGAACTTGGCTGTGATAGGCGATGGGAACCTGATGATTCCTACTCCCTGAAAATAAAAT  177

Qy    121 CACCAAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC  180
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    178 CACCAAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC  237

Qy    181 CACGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG    240
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    238 CACGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAG   297

Qy    241 CGCCAAAAAAAAAAGGTGTGCCAGGAGAAACGATGGGAAGCAAAGTTCCTAGACTACCTG   300
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    298 CGCCAAAAAAAAAAGGTGTGCCAGGAGAAACGATGGGAAGCAAAGTTCCTAGACTACCTG   357

Qy    301 CAAGTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCGGAAAGT  345
            |||||||||||||||||||||||||||||||||||||||||||||||
Db    358 CAAGTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCGGAAAGT  402
```

RESULT 14
US-10-262-439-84/c
Sequence 84, Application US/10262439
Publication No. US20030143196A1
GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/10/262,439
; CURRENT FILING DATE: 2002-09-30
; PRIOR APPLICATION NUMBER: US/09/451,527
; PRIOR FILING DATE: 1999-12-01
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 84
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-262-439-84

Query Match   100.0%;   Score 345;   DB 15;   Length 402;

```
Best Local Similarity   100.0%;  Pred. No. 1.7e-94;
Matches 345;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy    1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  345 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 286

Qy   61 CATCGAACTTGGCTGATAGGCGATGGGACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  285 CATCGAACTTGGCTGATAGGCGATGGGACCTGATGATTCCTACTCCTGAAAATAAAAAT 226

Qy  121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  225 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 166

Qy  181 CACGGGGGAGGCTGTGGGGATAAACTATTCCAAAACTGTCTCTTTAATAAAGAACACATAGAG 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  165 CACGGGGGAGGCTGTGGGGATAAACTATTCCAAAACTGTCTCTTTAATAAAGAACACATAGAG 106

Qy  241 CGCCAAAAAAAAAAAGGTGTTGCAGGGAGAGAGAGTGACAAAGTTCCTAGACTACCTG 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  105 CGCCAAAAAAAAAAAGGTGTTGCAGGGAGAGAGAGTGACAAAGTTCCTAGACTACCTG 46

Qy  301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
          ||||||||||||||||||||||||||||||||||||||||||||||
Db   45 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 1
```

```
Db  238 CGCCAAAAAAAAAAAAGGTGTCGAGGAGAGAGAGATGGGAGAGTGACAAAGTTCCTAGACTACCTG 297
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Qy  241 CGCCAAAAAAAAAAAGGTGTGCAGGGAGAGAGAGATGGGAGAGTGACAAAGTTCCTAGACTACCTG 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  298 CGCCAAAAAAAAAAAAGGTGTGCAGGGAGAGAGAGATGGGAGAGTGACAAAGTTCCTAGACTACCTG 357

Qy  301 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 345
          ||||||||||||||||||||||||||||||||||||||||||||||
Db  358 CAAGTATTTCTTGGTGTGTAATAAACACCGAGTGGACACCGGAAAGT 402

Search completed: August  7, 2005, 19:24:57
Job time : 287.184 secs
```

```
RESULT 15
US-10-787-382-7
; Sequence 7, Application US/10787382
; Publication No. US20040191868A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/10/787,382
; CURRENT FILING DATE: 2004-02-24
; PRIOR APPLICATION NUMBER: US/09/755,633
; PRIOR FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 7
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-787-382-7

Query Match   100.0%;  Score 345;  DB 19;  Length 402;
Best Local Similarity  100.0%;  Pred. No. 1.7e-94;
Matches 345;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy    1 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   58 TTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACT 117

Qy   61 CATCGAACTTGGCTGATAGGCGATGGGACCTGATGATTCCTACTCCTGAAAATAAAAAT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  118 CATCGAACTTGGCTGATAGGCGATGGGACCTGATGATTCCTACTCCTGAAAATAAAAAT 177

Qy  121 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  178 CACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 237

Qy  181 CACGGGGGAGGCTGTGGGGATAAACTATTCCAAAACTGTCTCTTTAATAAAGAACACATAGAG 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 CACGGGGGAGGCTGTGGGGATAAACTATTCCAAAACTGTCTCTTTAATAAAGAACACATAGAG 240
```

THIS PAGE BLANK (USPTO)

GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

OM nucleic - nucleic search, using sw model

Run on: August 7, 2005, 18:43:18 ; Search time 1468.11 Seconds
                 (without alignments)
                 8944.955 Million cell updates/sec

Title: US-10-787-382-9
Perfect score: 345
Sequence: 1 tttgctgagaaaatcccat.............ccgagtggacaccggaaagt 345
Scoring table: IDENTITY_NUC
                 Gapop 10.0 , Gapext 1.0
Searched: 34239544 seqs, 19032134700 residues
Total number of hits satisfying chosen parameters: 68479088

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
                 Maximum Match 100%
                 Listing first 45 summaries

Database :   EST:*
                 1: gb_est1:*
                 2: gb_est2:*
                 3: gb_htc:*
                 4: gb_est3:*
                 5: gb_est4:*
                 6: gb_est5:*
                 7: gb_est6:*
                 8: gb_gss1:*
                 9: gb_gss2:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
1	231.4	67.1	405	9	AY412020	AY412020 Homo sapi
2	231.4	67.1	456	9	CD559532	CD559532 AGENCOURT
3	231.4	67.1	456	9	CD559686	CD559686 AGENCOURT
4	231.4	67.1	470	6	CD559687	CD559687 AGENCOURT
5	231.4	67.1	492	6	CD559533	CD559533 AGENCOURT
6	227.4	65.9	405	9	AY412021	AY412021 Pan trog1
7	222.4	64.5	477	6	CD559608	CD559608 AGENCOURT
8	221	64.1	456	3	BC066281	BC066281 Homo sapi
9	221	64.1	467	6	CD559688	CD559688 AGENCOURT
10	221	64.1	478	6	CD559534	CD559534 AGENCOURT
11	220.4	63.9	458	3	BC066279	BC066279 Homo sapi
12	220.4	63.9	458	3	BC066280	BC066280 Homo sapi
13	220.4	63.9	463	6	CD559535	CD559535 AGENCOURT
14	220.4	63.9	473	6	CD559689	CD559689 AGENCOURT
15	220.4	63.9	489	6	CD559536	CD559536 AGENCOURT
16	220.4	63.9	817	3	BC069137	BC069137 Homo sapi
17	218.8	63.4	467	6	CD559690	CD559690 AGENCOURT
18	182.6	52.9	399	9	AY412022	AY412022 Mus muscu
19	131.8	38.2	622	9	CE331159	CE331159 tigr-gss-
20	78	22.6	503	5	BQ598873	BQ598873 MI-P-E4-a
21	74.2	21.5	781	9	CR235404	CR235404 Reverse s
22	55.2	16.0	495	7	CR554944	CR554944 DKFZp469N
23	48.2	14.0	737	9	CR026247	CR026247 Reverse s
24	40.6	11.8	522	4	BI670794	BI670794 PfEST0aa0

c	25	40	11.6	317	6	CD087271	CD087271 MC1-0036T
c	26	39.8	11.5	535	8	A2370501	A2370501 1M0121K03
c	27	39.6	11.5	863	9	AG405650	AG405650 Mus muscu
c	28	39.2	11.4	603	4	BJ328562	BJ328562 BJ328562
c	29	39.2	11.4	619	4	BJ328648	BJ328648 BJ328648
c	30	39.2	11.4	905	9	CNS00DS9	CNS00DS9 Drosophil
c	31	38.6	11.2	1359	4	BG543026	BG543026 602570858
c	32	38.2	11.1	667	9	CB510121	CB510121 tigr-gss-
c	33	38.2	11.1	797	9	CC567321	CC567321 CH240_441
c	34	38	11.0	432	1	AA560540	AA560540 v119f05.r
c	35	38	11.0	494	6	CB094467	CB094467 hz70d02.b
c	36	38	11.0	1011	9	AL076645	AL076645 Drosophil
c	37	37.8	11.0	584	5	BQ526053	BQ526053 NISC_no14
c	38	37.8	11.0	671	5	BX707130	BX707130 BX707130
c	39	37.8	11.0	684	5	BX758408	BX758408 BX758408
c	40	37.8	11.0	715	5	BX773473	BX773473 BX773473
c	41	37.8	11.0	724	5	BX773491	BX773491 BX773491
c	42	37.8	11.0	783	7	CF343019	CF343019 AGENCOURT
c	43	37.8	11.0	892	5	BX776535	BX776535 BX776535
c	44	37.6	10.9	604	7	CN441935	CN441935 BE040027B1
c	45	37.6	10.9	699	8	AQ781738	AQ781738 HS_3122_A

ALIGNMENTS

RESULT 1
AY412020
LOCUS   AY412020   405 bp   DNA   linear   GSS 16-DEC-2003
DEFINITION   Homo sapiens IL5 gene, VIRTUAL TRANSCRIPT, partial sequence,
             genomic survey sequence.
ACCESSION   AY412020
VERSION   AY412020.1   GI:39767985
KEYWORDS   GSS.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 405)
AUTHORS   Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
             Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
             Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
             Adams,M.D. and Cargill,M.
TITLE   Inferring nonneutral evolution from human-chimp-mouse orthologous
             gene trios
JOURNAL   Science 302 (5652), 1960-1963 (2003)
PUBMED   14671302
REFERENCE   2 (bases 1 to 405)
AUTHORS   Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
             Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
             Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
             Adams,M.D. and Cargill,M.
TITLE   Direct Submission
JOURNAL   Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive,
             Rockville, MD 20850, USA
COMMENT   This sequence was made by sequencing genomic exons and ordering
             them based on alignment.
FEATURES   Location/Qualifiers
     source   1..405
                     /organism="Homo sapiens"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9606"
     gene   <1..>405
                     /gene="IL5"
                     /locus_tag="HCM4418"
ORIGIN

Query Match   67.1%; Score 231.4; DB 9; Length 405;
  Best Local Similarity   80.4%;
  Matches 271; Conservative   0; Mismatches   66; Indels   0; Gaps   0;

Qy   9 AGAAAATCCCATGAAATAGACTGGTTGGGCAGAGACCTTGACACTGCTCTCCACTCATCGAAC 68
                ||||| |||||| || |||| ||| |||| |||||||||||| || ||| ||||| |||

RESULT 2

```
Db   66 AGAAATTCCCACAAGTGCATTGGTGGATGGAGAGAGACCTTGGCACTGCTTTCTACTCATCGAAC 125
Qy   69 TTGGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATATAAAAATCACCAACT
Db  126 TCTGCTGATAGCCAATGAGACTCTGAGGAATTCCTGTTCCATCATAAAAATCACCAACT 185
Qy  126 GTGCATTAAAGAAGTTTTTCAGGGGTATAGACCACATTGAAGAAACCAAACTGCCCACGGGGA 188
Qy  129 GTGCATTAAAGAAGTTTTTCAGGGGTATAGACCACATTGAAGAAACCAAACTGCCCACGGGGA 188
Db  186 GTGCACTGAAGAAAATCTTTCAGGGAATAGGGCACACTGAGAGTCAAACTGTGCAAGGGGG 245
Qy  189 GGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGCCAAAA 248
Db  246 TACTGTGGAAAGACTATTCAAAAAACTTGTCCTTAATAAAAGAAAATACATTGACGGCCAAAA 305
Qy  249 AAAAAGGTGTGCAGGAGAAAGATGGAGAGAGTGACAAAAGTTCCTAGACTACCTGCAAGTATT 308
Db  306 AAAAAAGTGTGGAGAAAAGACCGGAGAGTAAACCAATTCCTAGACTACCTGCAAGAGTT 365
Qy  306 AAAAAAGTGTGGAGAAAAGACCGGAGAGTAAACCAATTCCTAGACTACCTGCAAGAGTT 365
Qy  309 TCTTCGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 345
Db  366 TCTTCGGTGTAATGAACACCCGAGTGGATAATAGAAAGT 402
```

```
LOCUS       CD559532                 456 bp    mRNA    linear   EST 11-JUN-2003
DEFINITION  AGENCOURT 14497057 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971772 5', mRNA sequence.
ACCESSION   CD559532
VERSION     CD559532.1  GI:31585600
KEYWORDS    EST.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 456)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE     Unpublished (1999)
  JOURNAL   National Institutes of Health, Mammalian Gene Collection (MGC)
COMMENT     Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBKl row: g column: 11
            High quality sequence stop: 456.
FEATURES             Location/Qualifiers
     source          1..456
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971772"
                     /tissue_type="mixed"
                     /lab_host="DH5A (Tl phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxp-Sall; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presv.dat
                     a Note: this is a NIH_MGC Library."
ORIGIN
```

RESULT 3

```
Query Match          67.1%;  Score 231.4;  DB 6;  Length 456;
Best Local Similarity 80.4%;  Pred. No. 1e-53;
Matches  271;  Conservative  0;  Mismatches  66;  Indels  0;  Gaps  0;

Qy    9 AGAAAATCCCATGAAATAGACTGGGTGGCAGAGAGACCTTGACACTGCTTCCTCCACTCATCGAAC 68
Db   87 AGAAATTCCCACAAGTGCATTGGTGGATGGAGAGAGACCTTGGCACTGCTTTCTACTCATCGAAC 146
Qy   69 TTGGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTGAAAATATAAAAATCACCAACT 128
Db  147 TCTGCTGATAGCCAATGAGACTCTGAGGAATTCCTGTTCCATCATAAAAATCACCAACT 206
Qy  129 GTGCATTAAAGAAGTTTTTCAGGGGTATAGACCACATTGAAGAAACCAAACTGCCCACGGGGA 188
Db  207 GTGCACTGAAGAAAATCTTTCAGGGAATAGGGCACACTGAGAGTCAAACTGTGCAAGGGG 266
Qy  189 GGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGCCAAAA 248
Db  267 TACTGTGGAAAGACTATTCAAAAAACTTGTCCTTAATAAAAGAAAATACATTGACGGCCAAAA 326
Qy  249 AAAAAGGTGTGCAGGAGAAAGATGGAGAGAGTGACAAAAGTTCCTAGACTACCTGCAAGTATT 308
Db  327 AAAAAAGTGTGGAGAAAAGACCGGAGAGTAAACCAATTCCTAGACTACCTGCAAGAGTT 386
Qy  309 TCTTCGGTGTAATAAACACCCGAGTGGACACCCGGAAAGT 345
Db  387 TCTTCGGTGTAATGAACACCCGAGTGGATAATAGAAAGT 423
```

```
LOCUS       CD559686                 456 bp    mRNA    linear   EST 11-JUN-2003
DEFINITION  AGENCOURT 14497093 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971772 3', mRNA sequence.
ACCESSION   CD559686
VERSION     CD559686.1  GI:31585754
KEYWORDS    EST.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 456)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE     Unpublished (1999)
  JOURNAL   National Institutes of Health, Mammalian Gene Collection (MGC)
COMMENT     Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBKl row: g column: 11
            High quality sequence stop: 456.
FEATURES             Location/Qualifiers
     source          1..456
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971772"
```

Left section

```
                    /tissue_type="mixed"
                    /lab_host="DH5A (T1 phage-resistant)"
                    /clone_lib="NIH_MGC_195"
                    /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                    loxP-HindIII; Clones from this_library have been
                    PCR-amplified using gene-specific primers to contain the
                    complete open reading frame (based on known gene sequences
                    available from NCBI's RefSeq). Template for PCR is cDNA
                    derived from either pooled total RNA from 10 different tissues
                    cells lines or pooled total RNA from 30 different tissues
                    (from BD Biosciences/Clontech and Washington University).
                    PCR products are directionally cloned into the loxP sites
                    of the pDNR-Dual vector. Library constructed by Dr.
                    Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                    Expression Laboratory, Research Technology Program, SAIC
                    Frederick, NCI-Frederick, Frederick, MD 21702). For
                    information on which gene each clone represents, please
                    visit our anonymous ftp site at
                    ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSV.dat
                    a Note: this is a NIH_MGC Library."

ORIGIN
```

```
Query Match      67.1%;  Score 231.4; DB 6;  Length 456;
Best Local Similarity  80.4%;  Pred. No. 1e-53;
Matches  271; Conservative   0; Mismatches  66;  Indels   0; Gaps   0;

Qy       9 AGAAAATCCCATGAATAGACTGGTGGCGCAGAGACCTGACACTGCTCTCCACTCATCGAAC 68
           ||||||  | || |||||  |||||||||||||||||||||||||||||||| ||||||||
Db     368 AGAAATTCCCACAAGTGCCATTGGTGAAAGAGACCTTGGCACTGCTTTCTCACTCATCGAAC 309

Qy      69 TTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCCTGAAAATAAAAAATCACCAACT 128
           |||||||||||| |||  |||||||||||||||||||||||||||||||| || |||||||||
Db     308 TCTGGTGCTGATAGCCAATGAGACTCTGAGGATTCCTGTTCCTACATTAAAAATCACCAACT 249

Qy     129 GTGCATTAAAGAAGAGTTTTTCAGGGGTATAGACACATTGAAGAACCAAACTGTGCAAGGGGA 188
           ||||| ||  || |||||  ||||||||||||||||||||||||||||||||||||||||||
Db     248 GTGCACTGAAGAAAATCTTTCAGGGAATAGGCACACTGGAGAGTCAAACTGTGCAAGGGGG 189

Qy     189 GGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAAAGACACATAGAGCGCCAAAA 248
           |||||| |||| |||||||||| |||||||| |  || ||||| ||||| ||||||||||||
Db     188 TACTGTGGAAAAGACTATTCAAAAAACTTGTCCTTAATAAAAGAAATACATTGACGGCCAAAA 129

Qy     249 AAAAAAGGTGTGCAGGAGGAAGAATGGAGAGTGCAAAAGTTCCTAGACTACCTGCAAGTATT 308
           |||||| ||||||||||||||| ||||||||||||||||||||||||||||||||||||||
Db     128 AAAAAAGTGTGCGAGAGAACGAGGAGTAAACCAATTCCTAGACTACCTGCAAGAGTT 69

Qy     309 TCTTGGTGTAATAAACACCGAGTGGGACACCCGGAAAGT 345
           ||||||||||||||||||||||||||||||||||||||
Db      68 TCTTGGTGTAATGAACACCGAGTGGGATAATAGAAAGT 32
```

Right section

```
Tissue Procurement: Narayan Bhat
     cDNA Library Preparation: Bhat Laboratory
     cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
     DNA Sequencing by: Agencourt Bioscience Corporation
     Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
     http://image.llnl.gov
     Plate: IRBKl row: g column: 10
     High quality sequence start: 14
     High quality sequence stop: 470.

FEATURES             Location/Qualifiers
     source          1..470
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971771"
                     /tissue_type="mixed"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this_library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled total RNA from 10 different tissues
                     cells lines or pooled total RNA from 30 different tissues
                     (from BD Biosciences/Clontech and Washington University):
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSV.dat
                     a Note: this is a NIH_MGC Library."

ORIGIN
```

```
Query Match      67.1%;  Score 231.4; DB 6;  Length 470;
Best Local Similarity  80.4%;  Pred. No. 1e-53;
Matches  271; Conservative   0; Mismatches  66;  Indels   0; Gaps   0;

Qy       9 AGAAAATCCCATGAATAGACTGGTGGCGCAGAGACCTGACACTGCTCTCCACTCATCGAAC 68
           ||||||  | || |||||  |||||||||||||||||||||||||||||||| ||||||||
Db     381 AGAAATTCCCACAAGTGCCATTGGTGAAAGAGACCTTGGCACTGCTTTCTCACTCATCGAAC 322

Qy      69 TTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCCTGAAAATAAAAAATCACCAACT 128
           |||||||||||| |||  |||||||||||||||||||||||||||||||| || |||||||||
Db     321 TCTGGTGCTGATAGCCAATGAGACTCTGAGGATTCCTGTTCCTACATTAAAAATCACCAACT 262

Qy     129 GTGCATTAAAGAAGAGTTTTTCAGGGGTATAGACACATTGAAGAACCAAACTGTGCAAGGGGA 188
           ||||| ||  || |||||  ||||||||||||||||||||||||||||||||||||||||||
Db     261 GTGCACTGAAGAAAATCTTTCAGGGAATAGGCACACTGGAGAGTCAAACTGTGCAAGGGGG 202

Qy     189 GGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAAAGACACATAGAGCGCCAAAA 248
           |||||| |||| |||||||||| |||||||| |  || ||||| ||||| ||||||||||||
Db     201 TACTGTGGAAAAGACTATTCAAAAAACTTGTCCTTAATAAAAGAAATACATTGACGGCCAAAA 142

Qy     249 AAAAAAGGTGTGCAGGAGGAAGAATGGAGAGTGCAAAAGTTCCTAGACTACCTGCAAGTATT 308
           |||||| ||||||||||||||| ||||||||||||||||||||||||||||||||||||||
Db     141 AAAAAAGTGTGCGAGAGAACGAGGAGTAAACCAATTCCTAGACTACCTGCAAGAGTT 82

Qy     309 TCTTGGTGTAATAAACACCGAGTGGGACACCCGGAAAGT 345
           ||||||||||||||||||||||||||||||||||||||
Db      81 TCTTGGTGTAATGAACACCGAGTGGGATAATAGAAAGT 45
```

```
RESULT 5
CDS59533
LOCUS         CDS59533      492 bp    mRNA    linear    EST  26-NOV-2003
DEFINITION    AGENCOURT 14496993 NIH_MGC_195 Homo sapiens cDNA clone
              IMAGE:6971771 5', mRNA sequence.
ACCESSION     CDS59533
```

Far left column (bottom)

```
RESULT 4
CDS59687/c
LOCUS         CDS59687      470 bp    mRNA    linear    EST  19-NOV-2003
DEFINITION    AGENCOURT 14497029 NIH_MGC_195 Homo sapiens cDNA clone
              IMAGE:6971771 5', mRNA sequence.
ACCESSION     CDS59687
VERSION       CDS59687.2  GI:38453484
KEYWORDS      EST.
SOURCE        Homo sapiens (human)
  ORGANISM    Homo sapiens
              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
              Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE     1  (bases 1 to 470)
  AUTHORS     NIH-MGC http://mgc.nci.nih.gov/.
  TITLE       National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL     Unpublished (1999)
  COMMENT     On Jun 10, 2003 this sequence version replaced gi:31585755.
              Contact: Daniela S. Gerhard, Ph.D.
              Office of Cancer Genomics
              National Cancer Institute / NIH
              Bldg. 31 Rm10A07 Bethesda, MD 20892
              Email: cgapbs-r@mail.nih.gov
```

VERSION   CD559533.2 GI:38558947
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
  ORGANISM   Homo sapiens
       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
       Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 492)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585601.
       Contact: Daniela S. Gerhard, Ph.D.
       Office of Cancer Genomics
       National Cancer Institute / NIH
       Bldg. 31 Rm10A07 Bethesda, MD 20892
       Email: cgapbs-r@mail.nih.gov
       Tissue Procurement: Narayan Bhat
       cDNA Library Preparation: Bhat Laboratory
       cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
       DNA Sequencing by: Agencourt Bioscience Corporation
       Clone distribution: MGC clone distribution information can be
       found through the I.M.A.G.E. Consortium/LLNL at:
       http://image.llnl.gov
       Plate: IRBK1 row: g column: 10
       High quality sequence start: 14
       High quality sequence stop: 492.
FEATURES   Location/Qualifiers
  source   1..492
       /organism="Homo sapiens"
       /mol_type="mRNA"
       /db_xref="taxon:9606"
       /clone="IMAGE:6971771"
       /tissue_type="mixed"
       /lab_host="DH5A (T1 phage-resistant)"
       /clone_lib="NIH_MGC_195"
       /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
       loxP-HindIII; Clones from this library have been
       PCR-amplified using gene-specific primers to contain the
       complete open reading frame (based on known gene sequences
       available from NCBI's RefSeq). Template for PCR is cDNA
       derived from either pooled cytoplasmic polyA RNA from 30
       cell lines or pooled total RNA from 10 different tissues
       (from BD Biosciences/Clontech and Washington University).
       PCR products are directionally cloned into the loxP sites
       of the pDNR-Dual vector. Library constructed by Dr.
       Narayan Bhat, Earl Bere III and Hongling Liao (Gene
       Expression Laboratory, Research Technology Program, SAIC
       Frederick, NCI-Frederick, Frederick, MD 21702). For
       information on which gene each clone represents, please
       visit our anonymous ftp site at
       ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSV.dat
       a Note: this is a NIH_MGC Library."
ORIGIN

Query Match   67.1%;   Score 231.4;   DB 6;   Length 492;
Best Local Similarity   80.4%;   Pred. No. 1e-53;
Matches 271; Conservative   0;   Mismatches   66;   Indels   0;   Gaps   0;

```
Qy      9 AGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCCCACTCATCGAAC 68
            |||||||||||||||||||||||||||||||||||||||| |||||||||||||||||||
Db    121 AGAAATTCCCACAAGTGCATTGGTGAAAAGAGACCTTGGCACTCACTTGCTTTCTACTCATCGAAC 180
Qy     69 TTGGCTGATAGGCGATGGGGACCTGATGATTCCTACTCCCGAAAAATAAAAAAATCACCAAACT 128
            ||| |||||| |||||||||| |||||||| |||||||||||||||||||||||||||||||
Db    181 TCTGCTGATAGCCAATGAGACTCTGAGGATTCCTGTCCTACTATAAAAAATACCACACT 240
Qy    129 GTGCATTAAAGAAGTTTTTCAGGGGTATAGACACAATTGAAGACAAAACTGCCCACGCGGGA 188
            |||||||||||||||| ||||||||||||||||||||||| |||||||||||||||||||
Db    241 GTGCACTGAAGAAAATCTTTCAGGGAATAAGGCGCACACTGGAGAGTCAAACTGTGCAAGGGGG 300
Qy    189 GGCTGTGGATAAACTATTCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGCCAAAA 248
            |||||||||||||||||||||||||||||||||||||||||||||||||| |||||||||
Db    301 TACTGTGGAAAGACTATTCAAAAAACTTGTCCTTAATAAAGAAATACATTGACGGCCAAAA 360
```

```
Qy    249 AAAAAGGTGTGCAGAGAGACATGAGAGTGCAGAAAGTTCCTAGACTACCTGCGCAAGTAGTATT 308
            ||||||   ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    361 AAAAAAGTGTGGAGAGAAGAAGAGAGACCGGAGAAAACCAAATTCCTAGACTACCTTGCGCAAGAGTT 420
Qy    309 TCTTCGTGTAATGAACACACCCGAGTGACACCGGAAAGT 345
            |||||| ||||||||||||||||||||||||||||||||
Db    421 TCTTCGTGTAATGACACCCGAGTGGATAATAGAAAGT 457
```

RESULT 6

LOCUS   AY412021   405 bp   DNA   linear   GSS 16-DEC-2003
DEFINITION   Pan troglodytes IL5 gene, VIRTUAL TRANSCRIPT, partial sequence,
       genomic survey sequence.
ACCESSION   AY412021
VERSION   AY412021.1   GI:39767986
KEYWORDS   GSS.
SOURCE   Pan troglodytes (chimpanzee)
  ORGANISM   Pan troglodytes
       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
       Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae; Pan.
REFERENCE   1 (bases 1 to 405)
  AUTHORS   Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
       Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
       Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
       Adams,M.D. and Cargill,M.
  TITLE   Inferring nonneutral evolution from human-chimp-mouse orthologous
       gene trios
  JOURNAL   Science 302 (5652), 1960-1963 (2003)
  PUBMED   14671302
REFERENCE   2 (bases 1 to 405)
  AUTHORS   Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
       Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B.,
       Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
       Adams,M.D. and Cargill,M.
  TITLE   Direct Submission
  JOURNAL   Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive,
       Rockville, MD 20850, USA
COMMENT   This sequence was made by sequencing genomic exons and ordering
       them based on alignment.
FEATURES   Location/Qualifiers
  source   1..405
       /organism="Pan troglodytes"
       /mol_type="genomic DNA"
       /db_xref="taxon:9598"
  gene   <1..>405
       /gene="IL5"
       /locus_tag="HCM4418"
ORIGIN

Query Match   65.9%;   Score 227.4;   DB 9;   Length 405;
Best Local Similarity   79.2%;   Pred. No. 1.3e-52;
Matches 267; Conservative   0;   Mismatches   70;   Indels   0;   Gaps   0;

```
Qy      9 AGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACTCATCGAAC 68
            |||||||||||||||||||||||||||||||||||||||| ||||||||||||||||||||
Db     66 AGAAATTCCCACAAGTGCATTGGTGAAAAGAGACCTTGGCACTCACTTGCTTTCTACTCATCGAAC 125
Qy     69 TTGGCTGATAGGCGATGGGGACCTGATGATTCCTACTCCCGAAAAATAAAAAAATCACCAAACT 128
            ||| ||||||| |||||||||| ||||||||||||||||||||||||||||||||||||||||
Db    126 TCTGCTAATAGCCAATGAGACTCTGAGGATTCCTGTCCTACTATAAAAAATACCACACCAACN 185
Qy    129 GTGCATTAAAGAAGTTTTTCAGGGGTATAGACACAATTGAAGACAAAACTGCCCACGCGGGA 188
            |||||||||||||||| |||||||||||||||||||||||| |||||||||||||||||||
Db    186 NNGCACTGAAGAAAATCTTTCAGGGAATAAGGCGCACACTGGAGAGTCAAACTGTGCAAGGGGG 245
Qy    189 GGCTGTGGATAAACTATTCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGCCAAAA 248
            |||||||||||||||||||||||||||||||||||||||||||||||||| |||||||||
Db    246 TACTGTGGAAAGACTATTCAAAAAACTTGTCCTTAATAAAGAAATACATTGANGCGGCCAAAA 305
Qy    249 AAAAAGGTGTGCAGAGAGAATGAGAGTGCAGAAAGTTCCTAGACTACCTGCGCAAGTATT 308
            |||||   ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    306 AAAAAGGTGTGCAGAGAGACTTGNN... 308
```

```
Db    306  AAAAAAGTGTGGAGAAGAAAGACGGAGGAGTAAACCAATTCCTAGACTACCTGCAAGAGTT 365
           ||||||||||||||||||||||| |||||||||||||||||||||||||||||||||||||
Qy    309  TCTTGGTGTAATAAAACACCGAGTGGACCACCGGAAAGT 345

Db    366  TCTTGGTGTAATGAACACACCGAGTGGGATAATAGAAAGT 402
```

RESULT 7

```
CD559608
LOCUS       CD559608                477 bp    mRNA    linear   EST 26-NOV-2003
DEFINITION  AGENCOURT_14496997 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971867 5', mRNA sequence.
ACCESSION   CD559608
VERSION     CD559608.2  GI:38558942
KEYWORDS    EST.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 477)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE     National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT     On Jun 10, 2003 this sequence version replaced gi:31585676.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBK2  row: g  column: 10
            High quality sequence start: 107
            High quality sequence stop: 353.
FEATURES             Location/Qualifiers
     source          1..477
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971867"
                     /tissue_type="mixed"
                     /lab_host="DH5A (TI phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual.; Site_1: loxp-SalI; Site_2:
                     loxp-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presV.dat
                     a Note: this is a NIH_MGC Library."
ORIGIN
```

```
Qy     10  GAAAATCCCACAAGTGCATTCGGTGAAAGAGACCTTGGCACTGTGTCCTTCCTACTCGTGGAACT 69
           |||| ||||| ||||||
```

```
Best Local Similarity   78.9%; Pred. No. 3.4e-51;
Query Match 64.5%;  Score 222.4; DB 6;  Length 477;
Matches 265; Conservative 0; Mismatches 71; Indels 0; Gaps 0;
```

```
Db    107  GAAAATCCCACAAGTGCATTCGGTGAAAGAGACCTTGGCACTGTGTCCTTCCTACTCGTGGAACT 166
           |||| ||||| ||||||
Qy

Db    167  CTGCTGATAGCCAATGAGACTCTGAGGAATTCCTGTTCTCTGTTACATTAAAAAATCACCAACTG 226

Db    130  TGCATTAAAAGAAGTTTTTCAGGTATAGACACATTGAAAGAACCAAAACTGCCCACGCGGGGAG 189
           ||||  || ||| |||||||||||| ||||||||||||||||||||||||| ||  |||  |||
Qy    227  TGCACTACGAAAGAAATCTTTCAGGGAATATGCACACTGGGAGAGTCAAACCTGCCCAAAA 286

Qy     70  GCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGACACACATTAGAGGCCCAAAA 129
           ||||||  |||| | | | | |||||||||||||||||||||||||||| |||   ||||||
Db    227  TGCACTACGAAAGAAATCTTTCAGGGAATATGCACACTGGGAGAGTCAAACCTGCCCAAAA 286

Qy    190  ACTGTGGAAAGACTATTCAAAAAACTTGTCCTTAATAAAAGAAATACATTGACGGCCAAAA 249

Db    287  ACTGTGGAAAGACTATTCAAAAAACTTGTCCTTAATAAAAGAAATACATTGACGGCCAAAA 346

Qy    250  AAAAGGTGTGCAGGAGGAAGAAAGATGGAGGAGTGACAAAGTTCCTAGACTACCTGCAAGAGTATT 309
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    347  AAAAAGGGTGTAGAAGAAAGACGGAGGAGTAAACCAATTCCTAAAACTACCTGCAAGAGTTT 406

Qy    310  CTTGGTGTAATAAAACACCGAGTGGACCACCGGAAAGT 345
           ||||||||||||||| |||||||||||| |||||||||
Db    407  CTTGGTGTAATGAACACACCGAGTGGGATAATAGAAAGT 442
```

RESULT 8

```
BC066281
LOCUS       BC066281                456 bp    mRNA    linear   HTC 12-FEB-2004
DEFINITION  Homo sapiens cDNA clone IMAGE:6971770, containing frame-shift
            errors.
ACCESSION   BC066281
VERSION     BC066281.1  GI:42490969
KEYWORDS    HTC.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 456)
  AUTHORS   Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
            Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
            Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
            Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
            Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
            Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
            Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
            Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
            Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
            McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
            Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
            Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
            Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodrigues,S.,
            Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
            Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
            Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
            Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
            Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
  TITLE     Generation and initial analysis of more than 15,000 full-length
            human and mouse cDNA sequences
  JOURNAL   Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
  PUBMED    12477932
REFERENCE   2  (bases 1 to 456)
  AUTHORS   Strausberg,R.
  TITLE     Direct Submission
  JOURNAL   Submitted (03-FEB-2004) National Institutes of Health, Mammalian
            Gene Collection (MGC), Cancer Genomics Office, National Cancer
            Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
            USA
REMARK      NIH-MGC Project URL: http://mgc.nci.nih.gov
COMMENT     Contact: MGC help desk
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Sequencing Group at the Stanford Human Genome
            Center, Stanford University School of Medicine, Stanford, CA 94305
```

```
COMMENT        Web site:     http://www-shgc.stanford.edu
                 Contact:    (Dickson, Mark)  mcd@paxil.stanford.edu
                 Dickson, M., Schmutz, J., Grimwood, J., Rodriguez, A., and Myers,
                 R. M.

                 Clone distribution: MGC clone distribution information can be found
                 through the I.M.A.G.E. Consortium/LLNL at:  http://image.llnl.gov
                 Series: IRAK  Plate: 172 Row: a Column: 17
                 This clone was selected for full length sequencing because it
                 passed the following selection criteria: matched mRNA gi: 28559032
                 This clone has the following problem: frame shifted.
FEATURES             Location/Qualifiers
     source          1..456
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971770"
                     /tissue_type="PCR rescued clones"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH10B"
                     /note="Vector: pDNR-Dual"
ORIGIN
         Query Match         64.1%;    Score 221;  DB 3;  Length 456;
         Best Local Similarity  80.4%;    Pred. No. 8.4e-51;
         Matches  271;   Conservative   0;  Mismatches   65;  Indels   1;  Gaps   1;

Qy       9 AGAAAATCCCATGAATAGACTGGTGGCCAGAGACCTTGACACTGCTCTCCACTCATCGAAC 68
           ||||||||||||||||||||||||||||||||||| |||||||||||||||||||||||||
Db      89 AGAAATTCCCACAAGTGCATTGGTGGAAAGAGAGACCTTGGCACTGCTTTCTACTCATCGAAC 148

Qy      69 TTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCCTGAAAATAAAAATCACCAACT 128
           |||| ||||||||||||||||||||||||||||||||||||| ||||||||||||||||||
Db     149 TCTGCTGATAGGCCAATGAGACTCTGAGGAATTCCTGTTCCTGTACATTAAAAAATCACCAACT 208

Qy     129 GTGCATTAAAGAGAGTTTTTCAGGGTGTATAGACACATTGAAGAACCAAAACTGCCCACGGGGA 188
           ||||||||||||||||| |||||||||||||||||||||||||||||||||||||||||||||
Db     209 GTGCACTGAAGAAATCTTTCAGGGAATAGGCACACTGTGCAAGGGGG 268

Qy     189 GGCTGCTGGGATAAACTATTCCAAAACTTGTCTTTAATAAAAAGGAACAACATAGAGCGCCAAAA 248
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     269 TACTGTGGAAAAGACTATTCAAAAACTTGTCCTTAATAAAAAATACATTGACGCGCCAAAA 328

Qy     249 AAAAAGGTGTGCAGGAGAGAAAGATGAGAGTGACAAAGTTCCTAGACTACCTGCAAGTATT 308
           ||||| |||||||||||||||||||||||||||||||||||||||||||||||||||| |||
Db     329 AAAAA-GTGTGGAGAAGAAAGACGGAGAGGTAAACCAATTCCTAGACTACCTGACAGAGTT 387

Qy     309 TCTTGGTGTGTAATAAACACCGGAGTGGACACCGGAAAGT 345
           ||||||||||||||||||||||||||||||||||||||||
Db     388 TCTTGGTGTGTAATGAACACCGGAGTGGATAATAGAAAGT 424
```

```
RESULT 9
CD559688/c
LOCUS          CD559688          467 bp    mRNA      linear      EST 19-NOV-2003
DEFINITION     AGENCOURT_14496964 NIH_MGC_195 Homo sapiens cDNA clone
               IMAGE:6971770 5', mRNA sequence.
ACCESSION      CD559688
VERSION        CD559688.2   GI:38453486
KEYWORDS       EST.
SOURCE         Homo sapiens (human)
  ORGANISM     Homo sapiens
               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
               Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae; Homo.
REFERENCE      1  (bases 1 to 467)
  AUTHORS      NIH-MGC http://mgc.nci.nih.gov/.
  TITLE        National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL      Unpublished (1999)
COMMENT        On Jun 10, 2003 this sequence version replaced gi:31585756.
               Contact: Daniela S. Gerhard, Ph.D.
               Office of Cancer Genomics
               National Cancer Institute / NIH
               Bldg. 31 Rm10A07 Bethesda, MD 20892
```

```
FEATURES             Location/Qualifiers
     source          1..467
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971770"
                     /tissue_type="mixed"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site 1; loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     (from BD Biosciences/Clontech and Washington University).
                     cells lines or pooled total RNA from 10 different tissues
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSV.dat
                     a Note: this is a NIH_MGC Library.'"
ORIGIN
         Query Match         64.1%;    Score 221;  DB 6;  Length 467;
         Best Local Similarity  80.4%;    Pred. No. 8.4e-51;
         Matches  271;   Conservative   0;  Mismatches   65;  Indels   1;  Gaps   1;

Qy       9 AGAAAATCCCATGAATAGACTGGTGGCCAGAGACCTTGACACTGCTCTCCACTCATCGAAC 68
           ||||||||||||||||||||||||||||||||||| |||||||||||||||||||||||||
Db     378 AGAAATTCCCACAAGTGCATTGGTGGAAAGAGAGACCTTGGCACTGCTTTCTACTCATCGAAC 319

Qy      69 TTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCCTGAAAATAAAAATCACCAACT 128
           |||| |||||||||||||||||||||||||||||||||||||| ||||||||||||||||||
Db     318 TCTGCTGATAGGCCAATGAGACTCTGAGGAATTCCTGTTCCTGTACATTAAAAAATCACCAACT 259

Qy     129 GTGCATTAAAGAGAGTTTTTCAGGGTGTATAGACACATTGAAGAACCAAAACTGCCCACGGGGA 188
           ||||||||||||||||| |||||||||||||||||||||||||||||||||||||||||||||
Db     258 GTGCACTGAAGAAATCTTTCAGGGAATAGGCACACTGTGCAAGGGGG 199

Qy     189 GGCTGCTGGGATAAACTATTCCAAAACTTGTCTTTAATAAAAAGGAACAACATAGAGCGCCAAAA 248
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     198 TACTGTGGAAAAGACTATTCAAAAACTTGTCCTTAATAAAAAATACATTGACGCGCCAAAA 139

Qy     249 AAAAAGGTGTGCAGGAGAGAAAGATGAGAGTGACAAAGTTCCTAGACTACCTGCAAGTATT 308
           ||||| |||||||||||||||||||||||||||||||||||||||||||||||||||| |||
Db     138 AAAAA-GTGTGGAGAAGAAAGACGGAGAGGTAAACCAATTCCTAGACTACCTGACAGAGTT 80

Qy      69 TTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCCTGAAAATAAAAATCACCAACT 128

Qy     309 TCTTGGTGTGTAATAAACACCGGAGTGGACACCGGAAAGT 345
           ||||||||||||||||||||||||||||||||||||||||
Db      79 TCTTGGTGTGTAATGAACACCGGAGTGGATAATAGAAAGT 43
```

```
RESULT 10
CD559534
LOCUS          CD559534          478 bp    mRNA      linear      EST 26-NOV-2003
DEFINITION     AGENCOURT_14496928 NIH_MGC_195 Homo sapiens cDNA clone
               IMAGE:6971770 5', mRNA sequence.
```

Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Narayan Bhat
cDNA Library Preparation: Bhat Laboratory
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Agencourt Bioscience Corporation
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: IRBK1 row: g column: 09
High quality sequence start: 11
High quality sequence stop: 467.

```
ACCESSION   CD559534
VERSION     CD559534.2  GI:38558949
KEYWORDS    EST.
SOURCE      Homo sapiens (human)
ORGANISM    Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 478)
AUTHORS     NIH-MGC http://mgc.nci.nih.gov/.
TITLE       National Institutes of Health, Mammalian Gene Collection (MGC)
JOURNAL     Unpublished (1999)
COMMENT     On Jun 10, 2003 this sequence version replaced gi:31585602.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBKl  row: g  column: 09
            High quality sequence start: 1.
            High quality sequence stop: 478.
FEATURES             Location/Qualifiers
     source          1..478
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971770"
                     /tissue_type="mixed"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSV.dat
                     a Note: this is a NIH_MGC Library."
ORIGIN
Query Match     64.1%;  Score 221;  DB 6;  Length 478;
Best Local Similarity   80.4%;  Pred. No. 8.4e-51;
Matches 271;  Conservative   0;  Mismatches 65;  Indels  1;  Gaps  1;

Qy      9 AGAAAATCCATGAATAGACTGGTGGTCAGAGACCTTGACACTGCTCTCCACTCATCGAAC 68
           ||||||||||||||| | | |||||||||||||| ||||||||||||||||||||||||||
Db    110 AGAAAATTCCCACAAGTGCATTGGTGAAAGAGACCTTGGCACTGCTTTCATCCATCGAAC 169

Qy     69 TTGGCTGATAGGCGATGGGAACCTGATATTCCTACTCCTCGAAAATAAAAATCACCAACT 128
           ||||||| || ||||||||| ||||||| ||||| ||||||||||| |||| |||||||||
Db    170 TCTGCTGATAGGCCAATGAGACTCTCGAGGATTCCTCGTTCCGTACATAAAAATCACCAACT 229

Qy    129 GTGCATTAAAGAAGTTTTTCAGGGTATAGACAATTGAAGAACCAAACTGCCACGGGGGA 188
           |||||| |||| ||||||| ||||||| ||| || || |||||||||||||||||||||
Db    230 GTGCACTGAAGAAATCTTTCAGGGAATAGGCCACACTGGAGAGTCAAAACTGTGCAAGGGGG 289

Qy    189 GGCTGTGGATAAACTATTCCAAAACTTGTCTTAATAAAAGAACACATAGACGCGCCAAAA 248
           |||||| | |||||||| |||||||||| | |||| | ||| || |||||| |||||||||
```
```
Db    290 TACTGTGGAAAGACTATTCAAAAACTTGTCTTAATAAAAGAATACATTGACGGCCAAA 349

Qy    249 AAAAAGGTGTGCAGGAGAAAGATGGAGACGGAGTGACAAAAGTTCCTAGACTACCTGCAAGTATT 308
           |||||| || || |||| || ||||| | ||||| || || |||||| | |||||||||| |||
Db    350 AAAAA-GTGTGGAGAAAGAAGAGACGGAGAGTGAAGTAAACCAATTCCTAGACTACCTGCAAGTT 408

Qy    309 TCTTGGTGTAATTAAACACCCAGTGACACCCGAAAGT 345
           |||||||||||| |||||||| ||||||||||| | ||
Db    409 TCTTGGTGTAATGAACACCCGAGTGGGATAATAGAAAAGT 445
```

```
RESULT 11
BC062279
BC066279
LOCUS       BC066279                458 bp  mRNA   linear  HTC 12-FEB-2004
DEFINITION  Homo sapiens cDNA clone IMAGE:6971768, containing frame-shift
            errors.
ACCESSION   BC066279
VERSION     BC066279.1  GI:42490901
KEYWORDS    HTC.
SOURCE      Homo sapiens (human)
ORGANISM    Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 458)
AUTHORS     Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
            Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
            Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
            Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
            Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
            Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
            Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
            Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
            Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
            McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
            Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
            Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
            Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodriguez,S.,
            Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
            Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
            Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
            Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
            Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
TITLE       Generation and initial analysis of more than 15,000 full-length
            human and mouse cDNA sequences
JOURNAL     Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
PUBMED      12477932
REFERENCE   2  (bases 1 to 458)
AUTHORS     Strausberg,R.
TITLE       Direct Submission
JOURNAL     Submitted (03-FEB-2004) National Institutes of Health, Mammalian
            Gene Collection (MGC), Cancer Genomics Office, National Cancer
            Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
            USA
REMARK      NIH-MGC Project URL: http://mgc.nci.nih.gov
COMMENT     Contact: MGC help desk
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Sequencing Group at the Stanford Human Genome
            Center, Stanford University School of Medicine, Stanford, CA 94305
            Web site:      http://www-shgc.stanford.edu
            Contact:  (Dickson, Mark) mcd@paxil.stanford.edu
            Dickson, M., Schmutz, J., Grimwood, J., Rodriguez, A., and Myers,
            R. M.
            Clone distribution: MGC clone distribution information can be found
            through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
            Series: IRAK Plate: 172 Row: a Column: 15
            This clone was selected for full length sequencing because it
            passed the following selection criteria: matched mRNA gi: 28559032
            This clone has the following problem: frame shifted.
FEATURES             Location/Qualifiers
```

source   1. .458
                /organism="Homo sapiens"
                /mol_type="mRNA"
                /db_xref="taxon:9606"
                /clone="IMAGE:6971768"
                /tissue_type="PCR rescued clones"
                /clone_lib="NIH_MGC_195"
                /lab_host="DH10B"
                /note="Vector: pDNR-Dual"

ORIGIN

RESULT 12

Query Match   63.9%;   Score 220.4; DB 3;   Length 458;
Best Local Similarity 80.2%;   Pred. No. 1.2e-50;
Matches 271; Conservative   0; Mismatches 66; Indels 1; Gaps 1;

Qy   9 AGAAAATCCCATGAATAGACTGGTGGTGGCAGAGACACCTTGACACTGCTTCTCCACTCATCGAAC 68
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   89 AGAAAATTCCCACAAGTGCATTGGTGAAAGAGAGACCTTGGCACTGCTTTCTACTCATCGAAC 148

Qy   69 TTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAATCACCAACT 128
            ||||||| |||||||||||||||||||||||||||||||||||||||||||||||||||
Db   149 TCTGCTGATAGGCCAATGAGACTCTGAGGGATTCCGTGTTCCTGTACATAAAAATCACCAACT 208

Qy   129 GTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAAACCAAAACTGCCCACGGGGA 188
            ||||||||||||||||||||||| ||||||||| ||||||||||||||||||||| ||||||
Db   209 GTGCACTGAAGAAATCTTTCAGGGAATAGGCACACTGGACAGTCAAACTGTGCAAGGGGG 268

Qy   189 GGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAAGAAACACATAGAGCGCC-AAA 247
            |||||||||||| ||||||||||||||||||||||||||||||||||||||||||||| |||
Db   269 TACTGTGGAAAGACTATTCAAAAACTTGTCCTTAATAAAAATACATTGACGGCCAAAA 328

Qy   248 AAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAAGTAT 307
            |||||||||||||||||||||| ||||||||||||||||| |||||||||||||||||
Db   329 AAAAAAAGTGTGGGAGAGAAGACCGGAGAGTAAACCAAATCCTAGACTACCTGCAAGAGT 388

Qy   308 TTCTTGGTGTAATAAACACCCGAGTGGACACCGGAAAGT 345
            ||||||||| |||||||||||||||||||||||||||||
Db   389 TTCTTGGTGTAATGAACACCCGAGTGGATAATAGAAAGT 426

REFERENCE   2 (bases 1 to 458)
AUTHORS   Strausberg,R.
TITLE   Direct Submission
JOURNAL   Submitted (03-FEB-2004) National Institutes of Health, Mammalian
             Gene Collection (MGC), Cancer Genomics Office, National Cancer
             Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
             USA
REMARK   NIH-MGC Project URL: http://mgc.nci.nih.gov
COMMENT   Contact: MGC help desk
             Email: cgapbs-r@mail.nih.gov
             Tissue Procurement: Narayan Bhat
             cDNA Library Preparation: Bhat Laboratory
             cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
             DNA Sequencing by: Sequencing Group at the Stanford Human Genome
             Center, Stanford University School of Medicine, Stanford, CA 94305
             Web site: http://www-shgc.stanford.edu
             Contact: (Dickson, Mark) mcd@paxil.stanford.edu
             Dickson, M., Schmutz, J., Grimwood, J., Rodriguez, A., and Myers,
             R. M.
             Clone distribution: MGC clone distribution information can be found
             through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
             Series: IRAK Plate: 172 Row: a Column: 16
             This clone was selected for full length sequencing because it
             passed the following selection criteria: matched mRNA gi: 28559032
             This clone has the following problem: frame shifted.

FEATURES
source   1. .458
             /organism="Homo sapiens"
             /mol_type="mRNA"
             /db_xref="taxon:9606"
             /clone="IMAGE:6971769"
             /tissue_type="PCR rescued clones"
             /clone_lib="NIH_MGC_195"
             /lab_host="DH10B"
             /note="Vector: pDNR-Dual"

ORIGIN

RESULT 13

Query Match   63.9%;   Score 220.4; DB 3;   Length 458;
Best Local Similarity 80.2%;   Pred. No. 1.2e-50;
Matches 271; Conservative   0; Mismatches 66; Indels 1; Gaps 1;

Qy   9 AGAAAATCCCATGAATAGACTGGTGGTGGCAGAGACACCTTGACACTGCTTCTCCACTCATCGAAC 68
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   89 AGAAAATTCCCACAAGTGCATTGGTGAAAGAGAGACCTTGGCACTGCTTTCTACTCATCGAAC 148

Qy   69 TTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCTGAAAATAAAATCACCAACT 128
            ||||||| |||||||||||||||||||||||||||||||||||||||||||||||||||
Db   149 TCTGCTGATAGGCCAATGAGACTCTGAGGGATTCCGTGTTCCTGTACATAAAAATCACCAACT 208

Qy   129 GTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAAGAAACCAAAACTGCCCACGGGGA 188
            ||||||||||||||||||||||| ||||||||| ||||||||||||||||||||| ||||||
Db   209 GTGCACTGAAGAAATCTTTCAGGGAATAGGCACACTGGACAGTCAAACTGTGCAAGGGGG 268

Qy   189 GGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAAGAAACACATAGAGCGCC-AAA 247
            |||||||||||| ||||||||||||||||||||||||||||||||||||||||||||| |||
Db   269 TACTGTGGAAAGACTATTCAAAAACTTGTCCTTAATAAAAATACATTGACGGCCAAAA 328

Qy   248 AAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAAGTAT 307
            |||||||||||||||||||||| ||||||||||||||||| |||||||||||||||||
Db   329 AAAAAAAGTGTGGGAGAGAAGACCGGAGAGTAAACCAAATCCTAGACTACCTGCAAGAGT 388

Qy   308 TTCTTGGTGTAATAAACACCCGAGTGGACACCGGAAAGT 345
            ||||||||| |||||||||||||||||||||||||||||
Db   389 TTCTTGGTGTAATGAACACCCGAGTGGATAATAGAAAGT 426

LOCUS   BC066280   458 bp   mRNA   linear   HTC 12-FEB-2004
DEFINITION   Homo sapiens cDNA clone IMAGE:6971769, containing frame-shift
             errors.
ACCESSION   BC066280
VERSION   BC066280.1 GI:42490838
KEYWORDS   HTC.
SOURCE   Homo sapiens (human)
ORGANISM   Homo sapiens
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 458)
AUTHORS   Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
             Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
             Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
             Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
             Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
             Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
             Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
             Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
             Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
             McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
             Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
             Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
             Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodrigues,S.,
             Sanches,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
             Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
             Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
             Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
             Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
TITLE   Generation and initial analysis of more than 15,000 full-length
             human and mouse cDNA sequences
JOURNAL   Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
PUBMED   12477932

RESULT 13

LOCUS   CD559535   463 bp   mRNA   linear   EST 26-NOV-2003
DEFINITION   AGENCOURT_14496865 NIH_MGC_195 Homo sapiens cDNA clone

```
ACCESSION   CD559535
VERSION     CD559535.2  GI:38558950
KEYWORDS    EST.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 463)
  AUTHORS   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
  TITLE     National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT     NIH-MGC http://mgc.nci.nih.gov/.
            On Jun 10, 2003 this sequence version replaced gi:31585603.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBKl row: g column: 08
            High quality sequence stop: 463.
FEATURES             Location/Qualifiers
     source          1..463
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971769"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector:pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presv.dat
                     a Note: this is a NIH_MGC Library."
ORIGIN
```

Query Match   63.9%;   Score 220.4;   DB 6;   Length 463;
Best Local Similarity 80.2%; Pred. No. 1.2e-50;
Matches 271;   Conservative   0;   Mismatches 66;   Indels 1;   Gaps 1;

```
Qy          9 AGAAAATCCCATGAATAGACTGGTGGCGAGAGACCTTGACACTGCTCCCACTCATCGAAC   68
              ||||||||| ||||| ||||||||| |||| ||||||||||||||||||||||||||||||
Db         93 AGAAATCCCACAAGTGCATTGGTGAAAAGAGACCTTGGCACTGCTTTCTACTCATCGAAC  152

Qy         69 TTGGCTGATAGGCGATGGGAGACCTGATGATTCCTCCCGAAAATAAAAATTCACCAACT  128
              ||||||||||||| ||||| |||||||||||||  ||| | |||||||||||| |||||||
Db        153 TCTGCTGCTGATAGCCAATGAGACTCCTGAGGATTCCTGTTCCATTAAAAATCACCAACT  212

Qy        129 GTGCAATTAAAGAAGTTTTTCAGGGTATGACGACATGAAGACAAAACTGCCCACGGGGA  188
              |||| |||||||| |||||||||||| |||||||| ||||||| ||||| |||| ||||||
Db        213 GTGCACTGAAGAAAATCTTTCAGGGATAGGGAGGAGTCAAACTGTGCAAGGGGG       272

Qy        189 GGCTGTGGATAAACTATTCCAAAACTTGTCTTAATAAAAGAACACATAGACGAGCGCC-AAA  247
              ||||| ||||| || |||||||| || ||  |||| |||||||| || ||||| |||  |||
Db            ...
```

---

us-10-787-382-9.rst

```
        Db         273 TACTGTGCAAAGACTATTCAAAAACTTGTCCTTAATAAAGAAATACATTGACGGCCAAA  332
                        |||||||||||||||||||||||||||||||||||||| |||| ||||||||||| ||||
        Qy         248 AAAAAAGTGTGCAGGAGGACGAAAGATGGAGGAGTGACAAAAGTTCCTAGACTACCTTGT  307

        Db         333 AAAAAAAAGTGTGGAGAAGAGACGAAGACGGAGGAGTAAACCAATTCCTAGACTACCTTGCAAGACT  392
                        ||||||||||||||||||||||||||||||||||||||| ||  ||  ||||||||| ||||
        Qy         308 TTCTTGGTGTAATAAAACACCCGAGTGGACACCCGAGAAGT  345

        Db         393 TTCTTGGTGTAATGAACACACCCGAGTGGATAATAGAAAGT  430
```

RESULT 14

```
LOCUS       CD559689                 473 bp    mRNA    linear    EST 19-NOV-2003
DEFINITION  AGENCOURT_14496901 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971769 5', mRNA sequence.
ACCESSION   CD559689
VERSION     CD559689.2  GI:38453487
KEYWORDS    EST.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 473)
  AUTHORS   National Institutes of Health, Mammalian Gene Collection (MGC)
  TITLE     Unpublished (1999)
  JOURNAL
COMMENT     On Jun 10, 2003 this sequence version replaced gi:31585757.
            NIH-MGC http://mgc.nci.nih.gov/.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBKl row: g column: 08
            High quality sequence start: 16
            High quality sequence stop: 473.
FEATURES             Location/Qualifiers
     source          1..473
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971769"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector:pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presv.dat
                     a Note: this is a NIH_MGC Library."
ORIGIN
```

Query Match   63.9%;   Score 220.4;   DB 6;   Length 473;
Best Local Similarity 80.2%; Pred. No. 1.2e-50;

Matches 271; Conservative   0; Mismatches   66; Indels   1; Gaps   1;

```
Qy         9 AGAAAATCCCATGAATAGACTGGTGGGCAGAGACCCTTGACACTGCTTCTCCACTCATCGAAC 68
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       384 AGAAAATCCCACAAGTGCATTGGTGAAAGAGAGACCCTTGGCACTGCTTTCTACTCATCGAAC 325

Qy        69 TTGGCTGATAGGCGGATGGGGAACCTGAATGATTCCTACTCCTGAAAATAAAAATCACCAACT 128
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       324 TCTGCTGATAGCCAATGAGACTCTCGAGGATTCCGTGTTCCGTACATAAAAATCACCAACT 265

Qy       129 GTGCATTAAAGAAGTTTTTCAGGGTATAGACATTGAGAGAACACAAACTGCCCACGGGGA 188
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       264 GTGGCACTGAAGAAATCTTTCAGGGAAATAGGCACACTGCGAGAGTCAAAACTGTGCAAGGGGG 205

Qy       189 GGCTGGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACACATAGGAGCGCC-AAA 247
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||| |||
Db       204 TACTGTGGAAAGACTATTCAAAAACTTGTCCTTAATAAAGAAAATACCATTGACGGCCAAA 145

Qy       248 AAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAAGTAT 307
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       144 AAAAAAAGTGTGGGAGAAGAGGAGGAGTAAACCAATTCCTAGACTACCTGCAAGAGT 85

Qy       308 TTCTTGGTGTAATAAACACCGGAGTGGACACCGGAAAGT 345
             |||||||||||||||||||||||||||||||||||||||
Db        84 TTCTTGGTGTAATGAACACCGGAGTGGGATAATAGAAAGT 47
```

RESULT 15
CD559536
CD559536
LOCUS   CD559536   489 bp   mRNA   linear   EST 26-NOV-2003
DEFINITION   AGENCOURT_14496804 NIH_MGC_195 Homo sapiens cDNA clone
                    IMAGE:6971768 5', mRNA sequence.
ACCESSION   CD559536
VERSION   CD559536.2 GI:38585953
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
  ORGANISM   Homo sapiens
                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                    Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 489)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585604.
                    Contact: Daniela S. Gerhard, Ph.D.
                    Office of Cancer Genomics
                    National Cancer Institute / NIH
                    Bldg. 31 Rm10A07 Bethesda, MD 20892
                    Email: cgapbs-r@mail.nih.gov
                    Tissue Procurement: Narayan Bhat
                    cDNA Library Preparation: Bhat Laboratory
                    cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
                    DNA Sequencing by: Agencourt Bioscience Corporation
                    Clone distribution: MGC clone distribution information can be
                    found through the I.M.A.G.E. Consortium/LLNL at:
                    http://image.llnl.gov
                    Plate: IRBKi   row: g   column: 07
                    High quality sequence start: 17
                    High quality sequence stop: 489.

FEATURES   Location/Qualifiers
    source   1..489
                    /organism="Homo sapiens"
                    /mol_type="mRNA"
                    /db_xref="taxon:9606"
                    /clone="IMAGE:6971768"
                    /tissue_type="mixed"
                    /lab_host="DH5A (T1 phage-resistant)"
                    /clone_lib="NIH MGC 195"
                    /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                    loxP-HindIII; Clones from this library have been
                    PCR-amplified using gene-specific primers to contain the
                    complete open reading frame (based on known gene sequences
                    available from NCBI's RefSeq). Template for PCR is cDNA

derived from either pooled cytoplasmic polyA RNA from 30
cells lines or pooled total RNA from 10 different tissues
(from BD Biosciences/Clontech and Washington University).
PCR products are directionally cloned into the loxP sites
of the pDNR-Dual vector. Library constructed by Dr.
Narayan Bhat, Earl Bere III and Hongling Liao (Gene
Expression Laboratory, Research Technology Program, SAIC
Frederick, NCI-Frederick, Frederick, MD 21702). For
information on which gene each clone represents, please
visit our anonymous ftp site at
ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSV.dat
a Note: this is a NIH_MGC Library."

ORIGIN

Query Match   63.9%;   Score 220.4;   DB 6;   Length 489;
Best Local Similarity   80.2%;   Pred. No. 1.2e-50;
Matches 271; Conservative   0; Mismatches   66; Indels   1; Gaps   1;

```
Qy         9 AGAAAATCCCATGAATAGACTGGTGGGCAGAGACCCTTGACACTGCTTCTCCACTCATCGAAC 68
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       239 AGAAAATCCCACAAGTGCATTGGTGAAAGAGAGACCCTTGGCACTGCTTTCTACTCATCGAAC 178

Qy        69 TTGGCTGATAGGCGGATGGGGAACCTGAATGATTCCTACTCCTGAAAATAAAAATCACCAACT 128
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       179 TCTGCTGATAGCCAATGAGACTCTCGAGGATTCCGTGTTCCGTACATAAAAATCACCAACT 238

Qy       129 GTGCATTAAAGAAGTTTTTCAGGGTATAGACATTGAGAGAACACAAACTGCCCACGGGGA 188
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       239 GTGGCACTGAAGAAATCTTTCAGGGAAATAGGCACACTGCGAGAGTCAAAACTGTGCAAGGGGG 298

Qy       189 GGCTGGTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACACATAGGAGCGCC-AAA 247
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||| |||
Db       299 TACTGTGGAAAGACTATTCAAAAACTTGTCCTTAATAAAGAAAATACCATTGACGGCCAAA 358

Qy       248 AAAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAAGTAT 307
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       359 AAAAAAAGTGTGGGAGAAGAGGAGGAGTAAACCAATTCCTAGACTACCTGCAAGAGT 418

Qy       308 TTCTTGGTGTAATAAACACCGGAGTGGACACCGGAAAGT 345
             |||||||||||||||||||||||||||||||||||||||
Db       419 TTCTTGGTGTAATGAACACCGGAGTGGGATAATAGAAAGT 456
```

Search completed: August   8, 2005, 08:46:08
Job time : 1469.11 secs

GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

OM nucleic - nucleic search, using sw model

Run on: August 8, 2005, 13:33:24 ; Search time 7985.9 seconds
                                        (without alignments)
                                        10060.080 Million cell updates/sec

Title: US-10-787-382-18
Perfect score: 1658
Sequence: 1 aggcaaacactgaacatttc..........gtagtcggaaggattctcggaga 1658

Scoring table: OLIGO_NUC
                Gapop 60.0 , Gapext 60.0
Searched: 4708233 seqs, 2422607955 residues
Word size :   0

Total number of hits satisfying chosen parameters: 9416466

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database :   GenEmbl:*
                1: gb_ba:*
                2: gb_btg:*
                3: gb_in:*
                4: gb_om:*
                5: gb_ov:*
                6: gb_pat:*
                7: gb_ph:*
                8: gb_pl:*
                9: gb_pr:*
                10: gb_ro:*
                11: gb_sts:*
                12: gb_sy:*
                13: gb_un:*
                14: gb_vi:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	1658	100.0	1658	6	AF331920	AF331920 Canis fam
2	170	10.3	610	4	AF331919	AF331919 Canis fam
3	170	10.3	610	6	BD211558	BD211558 Canine an
c 4	170	10.3	610	6	BD211559	BD211559 Canine an
c 5	170	10.3	610	6	AR241536	AR241536 Sequence
c 6	170	10.3	610	6	AR241537	AR241537 Sequence
c 7	170	10.3	610	6	AR254492	AR254492 Sequence
c 8	170	10.3	610	6	AR254493	AR254493 Sequence
c 9	144	8.7	402	6	BD211560	BD211560 Canine an
c 10	144	8.7	402	6	BD211561	BD211561 Canine an
c 11	144	8.7	402	6	AR241538	AR241538 Sequence
c 12	144	8.7	402	6	AR241539	AR241539 Sequence
c 13	144	8.7	402	6	AR254494	AR254494 Sequence
c 14	144	8.7	402	6	AR254495	AR254495 Sequence
c 15	144	8.7	405	6	AR300436	AR300436 Sequence
c 16	144	8.7	405	6	AX083939	AX083939 Sequence
c 17	129	7.8	343	6	AX083948	AX083948 Sequence
c 18	129	7.8	345	6	BD211562	BD211562 Canine an
c 19	129	7.8	345	6	BD211563	BD211563 Canine an
c 20	129	7.8	345	6	AR241540	AR241540 Sequence
21	129	7.8	345	6	AR241541	AR241541 Sequence
c 22	129	7.8	345	6	AR254496	AR254496 Sequence
c 23	129	7.8	345	6	AR254497	AR254497 Sequence
24	129	7.8	356	4	AF091133	AF091133 Canis fam
25	43	2.6	520	4	OAU35038	U35038 Ovis aries
26	43	2.6	1140	4	OAILV1	U17052 Ovis aries
27	42	2.5	405	4	OAILV1	SSC010088 Sus scrof
28	42	2.5	529	4	SSC133452	SSC133452 Sus scrof
29	41	2.5	529	4	AJ133452	AJ133452 Sus scrof
30	41	2.5	405	4	AF068770	AF068770 Felis cat
31	41	2.5	197131	4	Z67872	Z67872 B.taurus mR
32	41	2.5	838	4	AF025436	AF025436 Felis cat
33	39	2.4	405	4	AC149665	AC149665 Bos tauru
34	30	1.8	354	4	U91947	U91947 Equus cabal
35	30	1.8	144571	2	AF051372	AF051372 Felis cat
36	30	1.8	150124	2	BX664726	BX664726 Human DNA
37	30	1.8	167036	2	AC148886	AC148886 Otolemur
38	30	1.8	143520	2	AC148855	AC148855 Otolemur
39	29	1.7	159990	9	AL954139	AL954139 Human DNA
40	29	1.7	163795	9	BX005192	BX005192 Human DNA
41	29	1.7	174366	9	AL590491	AL590491 Human DNA
42	29	1.7	209112	2	AC084146	AC084146 Homo sapi
43	29	1.7	213042	2	AC151015	AC151015 Callithri
44	28	1.7	405	9	AF294756	AF294756 Saimiri s
45	28	1.7	564	10	CPU34588	U34588 Cavia porce

ALIGNMENTS

RESULT 1
AF331920

LOCUS	AF331920	1658 bp	DNA	linear	MAM 04-OCT-2001

DEFINITION   Canis familiaris interleukin-5 gene, complete cds.
ACCESSION   AF331920
VERSION   AF331920.1 GI:15191182
KEYWORDS   .
SOURCE   Canis familiaris (dog)
  ORGANISM   Canis familiaris
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1 (bases 1 to 1658)
  AUTHORS   Yang,S., Sellins,K.S., Weber,E. and McCall,C.
  TITLE   Canine interleukin-5: molecular characterization of the gene and
             expression of biologically active recombinant protein
  JOURNAL   J. Interferon Cytokine Res. 21 (6), 361-367 (2001)
  MEDLINE   21334408
  PUBMED   11440633
REFERENCE   2 (bases 1 to 1658)
  AUTHORS   Yang,S.
  TITLE   Direct Submission
  JOURNAL   Submitted (22-DEC-2000) Immunology, Heska Corporation, 1613
             Prospect Parkway, Ft Collins, CO 80525, USA
FEATURES   Location/Qualifiers
     source   1..1658
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9615"
     mRNA   join(1..170,374..406,1276..1404,1523..1658)
                     /product="interleukin-5"
     5'UTR   1..26
     CDS   join(27..170,374..406,1276..1404,1523..1621)
                     /note="Il-5"
                     /codon_start=1
                     /product="interleukin-5"
                     /protein_id="AAL10716.1"
                     /db_xref="GI:15191183"
                     /translation="MRMLNLSLLALGAAYVSAFAVENPMNRLVAETLTLLSTHRTWL
                     IGDGNLMIPTPENKNHQLCIKEVFQGIDTLKNQTAHGEAVDKLFQNLSLIKEHIEROK
                     KRCAGERWRVTKFLDYLQVFLGVINTEWTPES"
     3'UTR   1622..1658
ORIGIN

```
Query Match         100.0%;  Score 1658;  DB 4;  Length 1658;
Best Local Similarity  100.0%;  Pred. No. 0;
Matches 1658;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy        1 AGGCAAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTTCTGAATTTGAGTTTGCTAGCTC   60
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        1 AGGCAAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTTCTGAATTTGAGTTTGCTAGCTC   60

Qy       61 TTGGGGCTGCCTAGTTTCTGCCTTTGCTCGTAGAAAATCCATGAATAGAGACTGGTGGCAG      120
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       61 TTGGGGCTGCCTAGTTTCTGCCTTTGCTCGTAGAAAATCCATGAATAGAGACTGGTGGCAG      120

Qy      121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGGTAATTTCT      180
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGGTAATTTCT      180
```

```
5'UTR         1..28
CDS          29..433
             /codon_start=1
             /note="IL-5"
             /product="interleukin-5"
             /protein_id="AAI10715.1"
             /db_xref="GI:15919181"
             /translation="MRMLLNLSLLALGAAAYVSAFAVENPMNRLVAEFLTLLSTHRTWL
             IGDGNLMIPTPENNNHQLCIKEVFQGIDTLKNQTAHGEAVDKLFQNLSLIKEHIEROK
             KRCAGERWRVTKFLDYLQVFLGVINTEWTPES"
3'UTR        433..610
ORIGIN

Query Match
Best Local Similarity   100.0%;   Score 170;   DB 4;   Length 610;
Matches 170; Conservative   0;   Mismatches   0;   Indels   0;   Gaps   0;

Qy      1 AGGCAAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      3 AGGCAAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTC 62

Qy     61 TTGGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAG 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     63 TTGGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAG 122

Qy    121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 170
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    123 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 172


RESULT 3
LOCUS      BD211558                610 bp    DNA       linear   PAT 17-JUL-2003
DEFINITION Canine and feline immunoregulatory proteins, nucleic acid molecules
           and method of using the same.
ACCESSION  BD211558
VERSION    BD211558.1  GI:33021328
KEYWORDS   JP 2002516104-A/64.
SOURCE     Canis familiaris
  ORGANISM Canis familiaris (dog)
           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
           Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE  1 (bases 1 to 610)
  AUTHORS  Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE    Canine and feline immunoregulatory proteins, nucleic acid molecules
           and method of using the same
  JOURNAL  Patent: JP 2002516104-A 64 04-JUN-2002;
           HESKA CORP
COMMENT              Canis familiaris (dog)
           OS       Canis familiaris (dog)
           PN       JP 2002516104-A/64
           PD       04-JUN-2002
           PF       28-MAY-1999 JP 200055I002
           PR       29-MAY-1998 US  60/087306
           PI       GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
           C12N15/09,A61K31/7088,A61K48/00,A61P37/02,A61K38/21,A61K39/00,A61K39/395,
           PC       A61K39/395,
           PC       A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,C07K14/535,
           PC       C07K14/54,
           PC       C07K14/56,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
           G01N33/15,
           PC       G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC   Canine
           and feline immunoregulatory proteins, nucleic acid    CC
           molecules and
           CC       method of using the same
           FH       Key             Location/Qualifiers
           FT       source          1..610
FEATURES            Location/Qualifiers
     source         (29)..(430).
                    Location/Qualifiers
             1. .610
             /organism="Canis familiaris"
             /mol_type="genomic DNA"
             /db_xref="taxon:9615"
ORIGIN
```

```
RESULT 4
LOCUS      BD211559/c              610 bp    DNA       linear   PAT 17-JUL-2003
DEFINITION Canine and feline immunoregulatory proteins, nucleic acid molecules
           and method of using the same.
ACCESSION  BD211559
VERSION    BD211559.1  GI:33021329
KEYWORDS   JP 2002516104-A/65.
SOURCE     Canis familiaris
  ORGANISM Canis familiaris (dog)
           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
           Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE  1 (bases 1 to 610)
  AUTHORS  Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE    Canine and feline immunoregulatory proteins, nucleic acid molecules
           and method of using the same
  JOURNAL  Patent: JP 2002516104-A 65 04-JUN-2002;
           HESKA CORP
COMMENT             Canis familiaris (dog)
           OS       Canis familiaris (dog)
           PN       JP 2002516104-A/65
           PD       04-JUN-2002
           PF       28-MAY-1999 JP 200055I002
           PR       29-MAY-1998 US  60/087306
           PI       GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
           C12N15/09,A61K31/7088,A61K48/00,A61P37/02,A61K38/21,A61K39/00,A61K39/395,
           PC       A61K39/395,
           PC       A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,C07K14/535,
           PC       C07K14/54,
           PC       C07K14/56,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
           G01N33/15,
           PC       G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC   Canine
           and feline immunoregulatory proteins, nucleic acid    CC
           molecules and
           CC       method of using the same
           FH       Key             Location/Qualifiers
           FT       source          1..610
FEATURES            Location/Qualifiers
     source         1..610
                    /organism='Canis familiaris (dog)'.
                    Location/Qualifiers
             1. .610
             /organism="Canis familiaris"
             /mol_type="genomic DNA"
             /db_xref="taxon:9615"
ORIGIN

Query Match
Best Local Similarity   100.0%;   Score 170;   DB 6;   Length 610;
Matches 170; Conservative   0;   Mismatches   0;   Indels   0;   Gaps   0;

Qy      1 AGGCAAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    608 AGGCAAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTC 549

Qy     61 TTGGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAG 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    548 TTGGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAG 489
```

Qy   121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 170
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   488 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 439

RESULT 5

LOCUS   AR241536   610 bp   DNA   linear   PAT 20-DEC-2002
AR241536
DEFINITION Sequence 80 from patent US 6471957.
ACCESSION   AR241536
VERSION   AR241536.1 GI:27287245
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 610)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine Il-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 80 29-OCT-2002;
FEATURES   Location/Qualifiers
     source   1..610
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match   10.3%; Score 170; DB 6; Length 610;
Best Local Similarity   100.0%; Pred. No. 3.6e-74;
Matches 170; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 AGGCAAACACTGAACACTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3 AGGCAAACACTGAACACTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 62

Qy   61 TTGGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAG 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   63 TTGGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAG 122

Qy   121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 170
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   123 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 172

RESULT 6

LOCUS   AR241537   610 bp   DNA   linear   PAT 20-DEC-2002
AR241537/c
DEFINITION Sequence 82 from patent US 6471957.
ACCESSION   AR241537
VERSION   AR241537.1 GI:27287246
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 610)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine Il-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 82 29-OCT-2002;
FEATURES   Location/Qualifiers
     source   1..610
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match   10.3%; Score 170; DB 6; Length 610;
Best Local Similarity   100.0%; Pred. No. 3.6e-74;
Matches 170; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 AGGCAAACACTGAACACTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   608 AGGCAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 549

Qy   61 TTGGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATGAATAGACTGGTGGCAG 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   548 TTGGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATGAATAGACTGGTGGCAG 489

Qy   121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 170
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   488 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 439

RESULT 7

LOCUS   AR254492   610 bp   DNA   linear   PAT 20-DEC-2002
AR254492
DEFINITION Sequence 80 from patent US 6482403.
ACCESSION   AR254492
VERSION   AR254492.1 GI:27303380
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 610)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Caniney Il-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 80 19-NOV-2002;
FEATURES   Location/Qualifiers
     source   1..610
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match   10.3%; Score 170; DB 6; Length 610;
Best Local Similarity   100.0%; Pred. No. 3.6e-74;
Matches 170; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 AGGCAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3 AGGCAAACACTGAACACTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 62

Qy   61 TTGGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAG 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   63 TTGGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAG 122

Qy   121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 170
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   123 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 172

RESULT 8

LOCUS   AR254493   610 bp   DNA   linear   PAT 20-DEC-2002
AR254493/c
DEFINITION Sequence 82 from patent US 6482403.
ACCESSION   AR254493
VERSION   AR254493.1 GI:27303381
KEYWORDS   .
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 610)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Caniney Il-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 82 19-NOV-2002;
FEATURES   Location/Qualifiers
     source   1..610
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match   10.3%; Score 170; DB 6; Length 610;
Best Local Similarity   100.0%; Pred. No. 3.6e-74;
Matches 170; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 AGGCAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   608 AGGCAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 549

Qy   61 TTGGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATGAATAGACTGGTGGCAG 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

```
Db      548 TTGGGGCTGCCTATGTTTCTGCCCTTTGCTGTGTAGAAAATCCCATGAATAGACTGGTGGCAG 489

Qy      121 AGAACTTGACACTGCTCGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 170
                |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      488 AGAACTTGACACTGCTCGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 439
```

RESULT 9
```
LOCUS       BD211560
DEFINITION  Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same.
ACCESSION   BD211560
VERSION     BD211560.1   GI:33021330
KEYWORDS    JP 2002516104-A/66.
SOURCE      Canis familiaris (dog)
  ORGANISM  Canis familiaris
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1  (bases 1 to 402)
  AUTHORS   Sim,G.; Yang,S.; Dreitz,M.J. and Wonderling,R.S.
  TITLE     Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same
  JOURNAL   Patent: JP 2002516104-A 66 04-JUN-2002;
            HESKA CORP
COMMENT     Canis familiaris (dog)
PN          JP 2002516104-A/66
PD          04-JUN-2002
PF          28-MAY-1999 JP 2000551002
PR          29-MAY-1998 US 60/087306
PI          GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
C12N15/09,A61K39/395,
PC          A61K39/395,
PC          A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,C07K14/535,
PC          C07K14/54,
PC          C07K14/56,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
            G01N33/15,
PC          G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC   Canine
            and feline immunoregulatory proteins, nucleic acid CC
            molecules and
CC          method of using the same
FH          Key             Location/Qualifiers
FT          source          1..402
FT                          /organism="Canis familiaris (dog)".

FEATURES             Location/Qualifiers
     source          1..402
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9615"

ORIGIN

Query Match      8.7%;  Score 144;  DB 6;  Length 402;
Best Local Similarity   100.0%;   Pred. No. 5e-61;
Matches  144;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy       27 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTTCTTGGGGCTGCCTARGTTGTTTCTGCCTTT 86
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTTCTTGGGGCTGCCTARGTTGTTTCTGCCTTT 60

Qy       87 GCTGTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACACCTTGACACTGCTCTCCACTCAT 146
               |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       61 GCTGTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACACCTTGACACTGCTCTCCACTCAT 120

Qy      147 CGAACTTGGCTGATAGGCGGATGGG 170
               |||||||||||||||||||||||||
Db      121 CGAACTTGGCTGATAGGCGGATGGG 144
```

RESULT 10
```
LOCUS       BD211561/c
DEFINITION  Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same.
```

```
ACCESSION   BD211561
VERSION     BD211561.1   GI:33021331
KEYWORDS    JP 2002516104-A/67.
SOURCE      Canis familiaris
  ORGANISM  Canis familiaris (dog)
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
COMMENT     Canis familiaris (dog)
PN          JP 2002516104-A/67
PD          04-JUN-2002
PF          28-MAY-1999 JP 2000551002
PR          29-MAY-1998 US 60/087306
PI          GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
C12N15/09,A61K31/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
PC          A61K39/395,
PC          A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,C07K14/535,
PC          C07K14/54,
PC          C07K14/56,C07K14/705,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
            G01N33/15,
PC          G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC   Canine
            and feline immunoregulatory proteins, nucleic acid CC
            molecules and
CC          method of using the same
FH          Key             Location/Qualifiers
FT          source          1..402
FT                          /organism="Canis familiaris (dog)".

FEATURES             Location/Qualifiers
     source          1..402
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9615"

ORIGIN

Query Match      8.7%;  Score 144;  DB 6;  Length 402;
Best Local Similarity   100.0%;   Pred. No. 5e-61;
Matches  144;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy       27 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTTCTTGGGGCTGCCTARGTTGTTTCTGCCTTT 86
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      402 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTTCTTGGGGCTGCCTARGTTGTTTCTGCCTTT 343

Qy       87 GCTGTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACACCTTGACACTGCTCTCCACTCAT 146
               |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      342 GCTGTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACACCTTGACACTGCTCTCCACTCAT 283

Qy      147 CGAACTTGGCTGATAGGCGGATGGG 170
               |||||||||||||||||||||||||
Db      282 CGAACTTGGCTGATAGGCGGATGGG 259
```

RESULT 11
```
AR241538
LOCUS       AR241538
DEFINITION  Sequence 83 from patent US 6471957.
ACCESSION   AR241538
VERSION     AR241538.1   GI:27287247
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S.; Dreitz,M.J. and Wonderling,R.S.
  TITLE     Canine IL-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 83 29-OCT-2002;
FEATURES             Location/Qualifiers
     source          1..402
                     /organism="unknown"
```

```
LOCUS       BD211561     402 bp    DNA     linear   PAT 17-JUL-2003
```

```
LOCUS       AR241538     402 bp    DNA     linear   PAT 20-DEC-2002
```

RESULT 12

ORIGIN
                    /mol_type="genomic DNA"

Query Match   8.7%; Score 144; DB 6; Length 402;
Best Local Similarity 100.0%; Pred. No. 5e-61;
Matches 144; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   27 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT 86
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT 60

Qy   87 GCTGTGAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 146
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTGAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy 147 CGAACTTGGCTGATAGGCGGATGGG 170
        |||||||||||||||||||||||||
Db 121 CGAACTTGGCTGATAGGCGGATGGG 144

LOCUS   AR241539   402 bp   DNA   linear   PAT 20-DEC-2002
AR241539/c
DEFINITION Sequence 84 from patent US 6471957.
ACCESSION   AR241539
VERSION   AR241539.1   GI:27287248
KEYWORDS
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine IL-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 84 29-OCT-2002;
FEATURES   Location/Qualifiers
     source   1..402
                     /organism="unknown"
                     /mol_type="genomic DNA"

RESULT 13

ORIGIN
                    /mol_type="unknown"
                    /organism="unknown"

Query Match   8.7%; Score 144; DB 6; Length 402;
Best Local Similarity 100.0%; Pred. No. 5e-61;
Matches 144; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   27 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT 86
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 402 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT 343

Qy   87 GCTGTGAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 146
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 342 GCTGTGAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 283

Qy 147 CGAACTTGGCTGATAGGCGGATGGG 170
        |||||||||||||||||||||||||
Db 282 CGAACTTGGCTGATAGGCGGATGGG 259

LOCUS   AR254494   402 bp   DNA   linear   PAT 20-DEC-2002
AR254494
DEFINITION Sequence 83 from patent US 6482403.
ACCESSION   AR254494
VERSION   AR254494.1   GI:27303382
KEYWORDS
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Caniney IL-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 83 19-NOV-2002;
FEATURES   Location/Qualifiers
     source   1..402

RESULT 14

ORIGIN
                    /organism="unknown"
                    /mol_type="genomic DNA"

Query Match   8.7%; Score 144; DB 6; Length 402;
Best Local Similarity 100.0%; Pred. No. 5e-61;
Matches 144; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   27 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT 86
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT 60

Qy   87 GCTGTGAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 146
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTGAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy 147 CGAACTTGGCTGATAGGCGGATGGG 170
        |||||||||||||||||||||||||
Db 121 CGAACTTGGCTGATAGGCGGATGGG 144

LOCUS   AR254495   402 bp   DNA   linear   PAT 20-DEC-2002
AR254495/c
DEFINITION Sequence 84 from patent US 6482403.
ACCESSION   AR254495
VERSION   AR254495.1   GI:27303383
KEYWORDS
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Caniney IL-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 84 19-NOV-2002;
FEATURES   Location/Qualifiers
     source   1..402
                     /organism="unknown"
                     /mol_type="genomic DNA"

RESULT 15

ORIGIN

Query Match   8.7%; Score 144; DB 6; Length 405;
Best Local Similarity 100.0%; Pred. No. 5e-61;
Matches 144; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   27 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT 86
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 402 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT 343

Qy   87 GCTGTGAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 146
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 342 GCTGTGAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 283

Qy 147 CGAACTTGGCTGATAGGCGGATGGG 170
        |||||||||||||||||||||||||
Db 282 CGAACTTGGCTGATAGGCGGATGGG 259

LOCUS   AR300436   405 bp   DNA   linear   PAT 12-JUN-2003
AR300436
DEFINITION Sequence 1 from patent US 6537781.
ACCESSION   AR300436
VERSION   AR300436.1   GI:3168787S
KEYWORDS
SOURCE   Unknown.
  ORGANISM Unknown.
            Unclassified.
REFERENCE   1 (bases 1 to 405)
  AUTHORS   Guo,H., Lawton,R., Mermer,B. and Aiyappa,A.P.
  TITLE   Methods and compositions concerning canine interleukin 5
  JOURNAL   Patent: US 6537781-A 1 25-MAR-2003;
FEATURES   Location/Qualifiers

```
source          1. .405
                /organism="unknown"
                /mol_type="genomic DNA"

ORIGIN

Query Match           8.7%;   Score 144;   DB 6;   Length 405;
Best Local Similarity  100.0%;  Pred. No. 5e-61;
Matches 144; Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy   27 ATGAGAATGCTTCTGAAATTTGGAGTTTGCTAGCTCTTGGGGCGTGCCTATGTTTCTGCCTTT 86
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 ATGAGAATGCTTCTGAAATTTGGAGTTTGCTAGCTCTTGGGGCGTGCCTATGTTTCTGCCTTT 60

Qy   87 GCTGTAGAAAATCCCATGAATAGACTGGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 146
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTAGAAAATCCCATGAATAGACTGGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy  147 CGAACTTGGCTGATAGGCGATGGG 170
        ||||||||||||||||||||||||
Db  121 CGAACTTGGCTGATAGGCGATGGG 144
```

Search completed: August 8, 2005, 20:39:51
Job time : 7986.9 secs

OM nucleic - nucleic search, using sw model

GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

Run on: August 8, 2005, 09:20:09 ; Search time 1111.38 Seconds
(without alignments)
8831.282 Million cell updates/sec

Title: US-10-787-382-18
Perfect score: 1658
Sequence: 1 aggcaaacactgaacatttc..........gtagtggaagatttggaga 1658
Scoring table: OLIGO_NUC
Searched: Gapop 60.0 , Gapext 60.0
Word size : 0
Total number of hits satisfying chosen parameters: 8780412

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database : N_Geneseq_16Dec04:*
1: geneseqn1980s:*
2: geneseqn1990s:*
3: geneseqn2000s:*
4: geneseqn2001as:*
5: geneseqn2001bs:*
6: geneseqn2002as:*
7: geneseqn2002bs:*
8: geneseqn2003as:*
9: geneseqn2003bs:*
10: geneseqn2003cs:*
11: geneseqn2003ds:*
12: geneseqn2004as:*
13: geneseqn2004bs:*

. Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	170	10.3	610	3	AAZ55546	Aaz55546 Canine in
c 2	170	10.3	610	3	AAZ55547	Aaz55547 Canine in
c 3	144	8.7	252	4	AAF74305	Aaf74305 Canine in
4	144	8.7	402	3	AAZ55548	Aaz55548 Canine in
c 5	144	8.7	402	3	AAZ55549	Aaz55549 Canine in
c 6	144	8.7	405	4	AAF74300	Aaf74300 Canine in
7	129	7.8	345	3	AAZ55550	Aaz55550 Canine ma
c 8	129	7.8	345	3	AAZ55551	Aaz55551 Canine ma
c 9	129	7.8	393	4	AAF74306	Aaf74306 Canine in
c 10	43	2.6	399	2	AAT50756	Aat50756 Ovine Il-
c 11	43	2.6	520	2	AAT50755	Aat50755 Ovine IL-
c 12	41	2.5	838	5	AAZ44265	Aaz44265 Porcine I
c 13	26	1.6	357	5	ABV56577	Abv56577 Human pro
c 14	26	1.6	700	4	AAH92592	Aah92592 Human inf
c 15	26	1.6	2235	4	AAC84351	Aac84351 Corn clon
c 16	26	1.6	3230	1	AAN81381	Aan81381 Entire nu
17	26	1.6	3230	2	AAQ74056	Aaq74056 Human int
18	26	1.6	3230	3	AAC73725	Aac73725 Human IL-
19	26	1.6	3230	8	ABX04379	Abx04379 Human Int
20	26	1.6	3230	12	ADN12146	Adn12146 Interleuk
21	26	1.6	3230	12	ADR12056	Adr12056 Human int
22	26	1.6	3241	3	AAA34856	Aaa34856 Human ade
23	26	1.6	3241	3	AAF20978	Aaf20978 Human low
24	26	1.6	3241	10	AB296672	Ab296672 Human nuc
25	26	1.6	4057	3	AAA34858	Aaa34858 Human ade
26	26	1.6	4057	3	AAF20980	Aaf20980 Human low
27	26	1.6	4057	10	AB296674	Ab296674 Human nuc
28	26	1.6	4057	11	ABD20523	Abd20523 Human pul
29	26	1.6	4057	11	ABD20522	Abd20522 Human pul
30	26	1.6	9738	6	AAS15002	Aas15002 DNA encod
31	26	1.6	274	8	ABZ73094	Abz73094 Rice leaf
c 32	26	1.5	368	10	ACC55526	Acc55526 Rice endo
33	26	1.5	403	4	AAL14836	Aal14836 Human bre
34	26	1.5	407	11	ACN91925	Acn91925 Breast ca
35	26	1.5	423	4	AAL23698	Aal23698 Human bre
36	26	1.5	461	11	ACN84861	Acn84861 Breast ca
37	26	1.5	493	12	ADQ17817	Adq17817 Human sof
38	26	1.5	512	9	ACC73216	Acc73216 Cat flea
c 39	26	1.5	512	12	ADL09862	Adl09862 Cat flea
c 40	26	1.5	596	10	ABX56654	Abx56654 Arabidops
41	26	1.5	700	4	AAH92593	Aah92593 Human inf
42	26	1.5	700	4	AAH92594	Aah92594 Human inf
c 43	26	1.5	824	6	ABN98947	Abn98947 Arabidops
c 44	26	1.5	970	10	ADD30659	Add30659 Plant yie
c 45	26	1.5	970	12	ADI43750	Adi43750 Plant tra

ALIGNMENTS

RESULT 1
AAZ55546
ID AAZ55546 standard; cDNA; 610 BP.
XX
AC AAZ55546;
XX
DT 14-MAR-2000 (first entry)
XX
DE Canine interleukin-5 (IL-5) cDNA.
XX
KW Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS Canis familiaris.
XX
FH Key Location/Qualifiers
FT CDS 29..433
FT /*tag= a
FT /product= "Canine IL-5"
XX
PN WO9961618-A2.
XX
PD 02-DEC-1999.
XX
PF 28-MAY-1999; 99WO-US011942.
XX
PR 29-MAY-1998; 98US-0087306P.
XX
PA (HESK-) HESKA CORP.
XX
PI Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR WPI; 2000-072623/06.
DR P-PSDB; AAY58219.
XX
PT Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS Claim 1h; Page 223-224; 264pp; English.
XX
CC Sequences AAZ55546-Z55551 represent cDNA sequences encoding canine
CC interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40

CC ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC nucleotides which encode these immunoregulatory proteins. The proteins,
CC their associated nucleic acids, specific antibodies and inhibitors may be
CC used as vaccines for therapeutic or prophylactic regulation of an immune
CC response in animals (particularly cats, dogs, horses and humans). They
CC may be used to treat autoimmune or infectious diseases including
CC allergies, tumours, inflammation and graft rejection, and to increase the
CC response from a co-administered antigen. The nucleotide sequences can
CC also be used for the recombinant production of a protein, while
CC nucleotide fragments are useful as probes, as amplification primers and
CC as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC The proteins may be used to raise antibodies and to screen for modulators
CC of activity, while the antibodies may be used in detection, and in drug
CC targeting.
XX
SQ Sequence 610 BP; 202 A; 114 C; 139 G; 155 T; 0 U; 0 Other;

Query Match   10.3%; Score 170; DB 3; Length 610;
Best Local Similarity 100.0%;
Matches 170; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 AGGCAAAACACTGAACATTTCAGAGCTATGAGAAGTGTTCTGAATTTGAGTTTGCTAGCTC 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3 AGGCAAAACACTGAACATTTCAGAGCTATGAGAAGTGTTCTGAATTTGAGTTTGCTAGCTC 62

Qy   61 TTGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAG 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   63 TTGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAG 122

Qy   121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGTAGGCGGATGGG 170
           ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   123 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGTAGGCGGATGGG 172

RESULT 2
AA255547/c
ID   AA255547 standard; cDNA; 610 BP.
XX
AC   AA255547;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA complement.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; 88.
XX
OS   Canis familiaris.
XX
FH   Key   Location/Qualifiers
FT   CDS   complement(178..582)
FT   /*tag= a
FT   /product= "Canine IL-5"
XX
PN   WO996161B-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999; 99WO-US011942.
XX
PR   29-MAY-1998; 98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58219.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX

PS   Claim 1h; Page 224-225; 264pp; English.
XX
CC   Sequences AA255546-255551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine Flt-3 ligand,
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline IL-4, canine
CC   or feline CD154 (CD40 ligand), canine IL-5, canine IL-13, feline
CC   ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting.
XX
SQ   Sequence 610 BP; 155 A; 139 C; 114 G; 202 T; 0 U; 0 Other;

Query Match   10.3%; Score 170; DB 3; Length 610;
Best Local Similarity 100.0%;
Matches 170; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 AGGCAAAACACTGAACATTTCAGAGCTATGAGAAGTGTTCTGAATTTGAGTTTGCTAGCTC 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   608 AGGCAAAACACTGAACATTTCAGAGCTATGAGAAGTGTTCTGAATTTGAGTTTGCTAGCTC 549

Qy   61 TTGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAG 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   548 TTGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAG 489

Qy   121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGTAGGCGGATGGG 170
           ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   488 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGTAGGCGGATGGG 439

RESULT 3
AAF74305
ID   AAF74305 standard; DNA; 252 BP.
XX
AC   AAF74305;
XX
DT   04-MAY-2001 (first entry)
XX
DE   Canine interleukin-5 coding sequence #2.
XX
KW   Dog; interleukin-5; IL-5; allergy; cancer; gene therapy;
KW   inflammatory reaction; ds.
XX
OS   Canis sp.
XX
PN   WO20011049-A2.
XX
PD   15-FEB-2001.
XX
PF   09-AUG-2000; 2000WO-US021651.
XX
PR   10-AUG-1999; 99US-00371615.
XX
PA   (IDEX-) IDEXX LAB INC.
XX
PI   Guo H, Lawton R, Mermer B, Aiyappa AP;
XX
DR   WPI; 2001-191542/19.
DR   P-PSDB; AAB72616.
XX
PT   Novel canine interleukin 5 polynucleotide and polypeptides are used for
PT   generating antibodies which are useful in treating allergies in dogs.
XX

PS   Example 1; Fig 1; 48pp; English.
XX
CC   The present invention provides the protein and coding sequences of the
CC   canine interleukin-5 (IL-5) protein. This can be used to treat allergies,
CC   cancer and inflammatory reactions in dogs. The present sequence is one
CC   version of the IL-5 coding sequence shown in the specification
XX
SQ   Sequence 252 BP; 69 A; 54 C; 60 G; 69 T; 0 U; 0 Other;

     Query Match   8.7%; Score 144; DB 4; Length 252;
     Best Local Similarity   100.0%; Pred. No. 2.5e-42;
     Matches 144; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   27 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTTGGGGCTGCCTATGTTTCTGCCTTT 86
Db   1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTTGGGGCTGCCTATGTTTCTGCCTTT 60

Qy   87 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 146
Db   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy   147 CGAACTTGGCTGATAGGCGATGGG 170
Db   121 CGAACTTGGCTGATAGGCGATGGG 144

RESULT 4
AA255548
ID   AA255548 standard; cDNA; 402 BP.
XX
AC   AA255548;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA coding region.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999; 99WO-US011942.
XX
PR   29-MAY-1998; 98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58219.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 225; 264pp; English.
XX
CC   Sequences AA255546-Z55551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can

CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targetting.
XX
SQ   Sequence 402 BP; 129 A; 79 C; 93 G; 101 T; 0 U; 0 Other;

     Query Match   8.7%; Score 144; DB 3; Length 402;
     Best Local Similarity   100.0%; Pred. No. 2.3e-42;
     Matches 144; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   27 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTTGGGGCTGCCTATGTTTCTGCCTTT 86
Db   1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTTGGGGCTGCCTATGTTTCTGCCTTT 60

Qy   87 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 146
Db   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy   147 CGAACTTGGCTGATAGGCGATGGG 170
Db   121 CGAACTTGGCTGATAGGCGATGGG 144

RESULT 5
AA255549/c
ID   AA255549 standard; cDNA; 402 BP.
XX
AC   AA255549;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine interleukin-5 (IL-5) cDNA coding region complement.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999; 99WO-US011942.
XX
PR   29-MAY-1998; 98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58219.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 226; 264pp; English.
XX
CC   Sequences AA255546-Z55551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can

```
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting.
XX
SQ   Sequence 402 BP; 101 A; 93 C; 79 G; 129 T; 0 U; 0 Other;

Qy   Query Match       8.7%; Score 144; DB 3; Length 402;
     Best Local Similarity   100.0%; Pred. No. 2.3e-42;
     Matches  144; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy          27 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT 86
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         402 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT 343

Qy          87 GCTGTPAGAAAATCCCATGAATAGACTGGTGGGCGAGAGACCTTGACACTGCTCTCCACTCAT 146
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         342 GCTGTPAGAAAATCCCATGAATAGACTGGTGGGCGAGAGACCTTGACACTGCTCTCCACTCAT 283

Qy         147 CGAACTTGGCTGATAGGCGATGGG 170
               ||||||||||||||||||||||||
Db         282 CGAACTTGGCTGATAGGCGATGGG 259


RESULT 6
AAF74300
ID   AAF74300 standard; DNA; 405 BP.
XX
AC   AAF74300;
XX
DT   04-MAY-2001  (first entry)
XX
DE   Canine interleukin-5 coding sequence #1.
XX
KW   Dog; interleukin-5; IL-5; allergy; cancer; gene therapy;
KW   inflammatory reaction; d8.
OS   Canis sp.
XX
PN   WO20011049-A2.
XX
PD   15-FEB-2001.
XX
PF   09-AUG-2000; 2000WO-US021651.
XX
PR   10-AUG-1999;    99US-00371615.
XX
PA   (IDEX-) IDEXX LAB INC.
XX
PI   Guo H, Lawton R, Mermer B, Aiyappa AP;
XX
DR   WPI; 2001-191542/19.
DR   P-PSDB; AAB72615.
XX
PT   Novel canine interleukin 5 polynucleotide and polypeptides are used for
PT   generating antibodies which are useful in treating allergies in dogs.
XX
PS   Claim 31; Page 46; 48pp; English.
XX
CC   The present invention provides the protein and coding sequences of the
CC   canine interleukin-5 (IL-5) protein. This can be used to treat allergies,
CC   cancer and inflammatory reactions in dogs. The present sequence is one
CC   version of the IL-5 coding sequence shown in the specification.
XX
SQ   Sequence 405 BP; 131 A; 77 C; 94 G; 103 T; 0 U; 0 Other;

Qy   Query Match       8.7%; Score 144; DB 4; Length 405;
     Best Local Similarity   100.0%; Pred. No. 2.3e-42;
     Matches  144; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy          27 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT 86
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db           1 ATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT 60

Qy          87 GCTGTPAGAAAATCCCATGAATAGACTGGTGGGCGAGAGACCTTGACACTGCTCTCCACTCAT 146
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          61 GCTGTPAGAAAATCCCATGAATAGACTGGTGGGCGAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy         147 CGAACTTGGCTGATAGGCGATGGG 170
               ||||||||||||||||||||||||
Db         121 CGAACTTGGCTGATAGGCGATGGG 144


RESULT 7
AAZ55550
ID   AAZ55550 standard; cDNA; 345 BP.
XX
AC   AAZ55550;
XX
DT   14-MAR-2000  (first entry)
XX
DE   Canine mature interleukin-5 (IL-5) cDNA.
XX
KW   Interleukin-5; IL-5; antibody; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
OS   Canis familiaris.
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999;    99WO-US011942.
XX
PR   29-MAY-1998;    98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58220.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 226-227; 264pp; English.
XX
CC   Sequences AAZ55546-Z55551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-5, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, canine IL-13, feline interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory therapeutics (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targeting.
XX
SQ   Sequence 345 BP; 120 A; 68 C; 78 G; 79 T; 0 U; 0 Other;

Qy   Query Match       7.8%; Score 129; DB 3; Length 345;
     Best Local Similarity   100.0%; Pred. No. 6.3e-37;
     Matches  129; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy        1276 CACCAACTGTGCATTAAAGAAGAGTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCC 1335
```

Db 121 CACCAACTGTGCCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Qy 1336 CACGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAGAAGAACACATAGAG 1395
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 181 CACGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAGAAGAACACATAGAG 240

Qy 1396 CGCCAAAAA 1404
        |||||||||
Db 241 CGCCAAAAA 249

RESULT 8
ID   AA255551/c AA255551 standard; cDNA; 345 BP.
XX
AC   AA255551;
XX
DT   14-MAR-2000 (first entry)
XX
DE   Canine mature interleukin-5 (IL-5) cDNA complement.
XX
KW   Interleukin-5; IL-5; antibody; canine; inhibitor; immune response;
KW   immunoregulation; tumour; cancer; autoimmune disease; vaccine; ss.
XX
OS   Canis familiaris.
XX
PN   WO9961618-A2.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999; 99WO-US011942.
XX
PR   29-MAY-1998; 98US-0087306P.
XX
PA   (HESK-) HESKA CORP.
XX
PI   Sim G, Yang S, Dreitz MJ, Wonderling RS;
XX
DR   WPI; 2000-072623/06.
DR   P-PSDB; AAY58220.
XX
PT   Nucleic acids encoding immunoregulatory proteins from cats or dogs,
PT   useful for treating or preventing e.g. tumors or autoimmune disease.
XX
PS   Claim 1h; Page 228; 264pp; English.
XX
CC   Sequences AA255546-255551 represent cDNA sequences encoding canine
CC   interleukin-5 (IL-5). The invention relates to canine IL-4, canine or
CC   feline Flt-3 ligand, canine or feline CD40, canine or feline CD154 (CD40
CC   ligand), canine IL-5, canine interferon-alpha (IFN-alpha)
CC   and feline granulocyte macrophage colony-stimulating factor (GMCSF), and
CC   nucleotides which encode these immunoregulatory proteins. The proteins,
CC   their associated nucleic acids, specific antibodies and inhibitors may be
CC   used as vaccines for therapeutic or prophylactic regulation of an immune
CC   response in animals (particularly cats, dogs, horses and humans). They
CC   may be used to treat autoimmune or infectious diseases including
CC   allergies, tumours, inflammation and graft rejection, and to increase the
CC   response from a co-administered antigen. The nucleotide sequences can
CC   also be used for the recombinant production of a protein, while
CC   nucleotide fragments are useful as probes, as amplification primers and
CC   as sources of inhibitory nucleotides (e.g., antisense oligonucleotides).
CC   The proteins may be used to raise antibodies and to screen for modulators
CC   of activity, while the antibodies may be used in detection, and in drug
CC   targetting
XX
SQ   Sequence 345 BP; 79 A; 78 C; 68 G; 120 T; 0 U; 0 Other;

Qy 1276 CACCAACTGTGCCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 1335

Db 225 CACCAACTGTGCCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 166
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Qy 1336 CACGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAGAAGAACACATAGAG 1395
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 165 CACGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAGAAGAACACATAGAG 106

Qy 1396 CGCCAAAAA 1404
        |||||||||
Db 105 CGCCAAAAA 97

RESULT 9
ID   AAF74306 AAF74306 standard; DNA; 393 BP.
XX
AC   AAF74306;
XX
DT   04-MAY-2001 (first entry)
XX
DE   Canine interleukin-5 coding sequence #3.
XX
KW   Dog; interleukin-5; IL-5; allergy; cancer; gene therapy;
KW   inflammatory reaction; ds.
XX
OS   Canis sp.
XX
PN   WO200111049-A2.
XX
PD   15-FEB-2001.
XX
PF   09-AUG-2000.; 2000WO-US021651.
XX
PR   10-AUG-1999; 99US-00371615.
XX
PA   (IDEX-) IDEXX LAB INC.
XX
PI   Guo H, Lawton R, Mermer B, Aiyappa AP;
XX
DR   WPI; 2001-191542/19.
XX
PT   Novel canine interleukin 5 polynucleotide and polypeptides are used for
PT   generating antibodies which are useful in treating allergies in dogs.
XX
PS   Claim 1; Page 35; 48pp; English.
XX
CC   The present invention provides the protein and coding sequences of the
CC   canine interleukin-5 (IL-5) protein. This can be used to treat allergies,
CC   cancer and inflammatory reactions in dogs. The present sequence is one
CC   version of the IL-5 coding sequence shown in the specification
XX
SQ   Sequence 393 BP; 82 A; 86 C; 97 T; 0 U; 0 Other;

Qy 1276 CACCAACTGTGCCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 1335
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   76 CACCAACTGTGCCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 135
Qy 1336 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAGAAGAACACATAGAG 1395
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 136 CACGGGGGAGGCTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAGAAGAACACATAGAG 195

Qy 1396 CGCCAAAAA 1404
        |||||||||
Db 196 CGCCAAAAA 204

RESULT 10
ID   AAT50756 AAT50756 standard; cDNA; 399 BP.

```
RESULT 11
AAT50755

ID   AAT50755 standard; DNA; 520 BP.
XX
AC   AAT50755;
```

```
Qy   100 CCATGAATAGACTGGTGGGCAGGAGACCTTGACACTGCTCTCCAC 142
         |||||||||||||||||||||||||||||||||||||||||||||
Db    68 CCATGAATAGACTGGTGGGCAGGAGACCTTGACACTGCTCTCCAC 110
```

```
Query Match    2.6%;   Score 43;   DB 2;   Length 399;
Best Local Similarity  100.0%;   Pred. No. 7.5e-06;
Matches  43;   Conservative  0;   Mismatches  0;   Indels  0;   Gaps  0;
```

Left column:

```
XX
AC   AAT50756;
XX
DT   17-OCT-2003 (revised)
DT   24-SEP-1997 (first entry)
XX
DE   Ovine IL-5 cDNA.
XX
KW   Cytokine; ovine; sheep; interleukin-5; interleukin-12; IL-5; IL-12;
KW   livestock; cow; stress; transport; vaccine adjuvant; veterinary; cancer;
KW   immunosuppression; allergy; reproductive system; growth; early maturity;
KW   antibody; diagnosis; immunopotentiator;
KW   early haematopoietic progenitor cell; cytotoxic cell; thymocyte;
KW   secretion; IgM; IgA; bacterial endotoxin; gamma-interferon; ss.
XX
OS   Ovis aries.
XX
PN   WO9700321-A1.
XX
PD   03-JAN-1997.
XX
PF   14-JUN-1996;   96WO-AU000360.
XX
PR   14-JUN-1995;   95AU-00003502.
PR   27-OCT-1995;   95AU-00006244.
XX
PA   (CSIR ) COMMONWEALTH SCI & IND RES ORG.
XX
PI   Seow H,   Wood P;
XX
DR   WPI; 1997-077528/07.
DR   P-PSDB; AAW08479.
XX
PT   Nucleic acid encoding ovine interleukin-5 or -12 - used as vaccine
PT   adjuvants and to treat or prevent microbial infections in livestock.
XX
PS   Claim 6; Page 41-42; 78pp; English.
XX
CC   The sequences given in AAT50755-56 encode ovine interleukin-5 (IL-5).
CC   Ovine IL-5 or IL-12 are used to treat and/or prevent infections in
CC   livestock (esp. cows and sheep), particularly where the animals are
CC   stressed, e.g. during transport. IL-5 and IL-12 can also be used as
CC   adjuvants in vaccines for veterinary use (partic. weakly immunogenic
CC   subunit or synthetic peptide vaccines). They may also be used to treat
CC   cancer, immunosuppression and allergy, to enhance/suppress the
CC   reproductive system and to promote growth or early maturity. Optionally
CC   interleukin can be delivered from constructs or delivery cells and
CC   antibodies are useful in enzyme immunoassays for rapid diagnosis of
CC   infection. The interleukins are immunopotentiators, especially IL-5
CC   promotes growth of early haematopoietic progenitor cells and generation
CC   of cytotoxic cells from thymocytes, also it stimulates production and
CC   secretion of IgM and IgA (in synergism with bacterial endotoxin). IL-12
CC   induces production of gamma-interferon by, and proliferation of, T and NK
CC   cells and increases the (non-)specific cytolytic lymphocyte response. The
CC   genetic constructs can also be used for in vitro production of IL-5 or -
CC   12. (Updated on 17-OCT-2003 to standardise OS field)
XX
SQ   Sequence 399 BP; 130 A; 77 C; 93 G; 99 T; 0 U; 0 Other;
```

Right column:

```
XX
DT   17-OCT-2003 (revised)
DT   24-SEP-1997 (first entry)
XX
DE   Ovine IL-5 gene.
XX
KW   Cytokine; ovine; sheep; interleukin-5; interleukin-12; IL-5; IL-12;
KW   livestock; cow; stress; transport; vaccine adjuvant; veterinary; cancer;
KW   immunosuppression; allergy; reproductive system; growth; early maturity;
KW   antibody; diagnosis; immunopotentiator;
KW   early haematopoietic progenitor cell; cytotoxic cell; thymocyte;
KW   secretion; IgM; IgA; bacterial endotoxin; gamma-interferon; ss.
XX
OS   Ovis aries.
XX
PN   WO9700321-A1.
XX
PD   03-JAN-1997.
XX
PF   14-JUN-1996;   96WO-AU000360.
XX
PR   14-JUN-1995;   95AU-00003502.
PR   27-OCT-1995;   95AU-00006244.
XX
PA   (CSIR ) COMMONWEALTH SCI & IND RES ORG.
XX
PI   Seow H,   Wood P;
XX
DR   WPI; 1997-077528/07.
DR   P-PSDB; AAW08479.
XX
PT   Nucleic acid encoding ovine interleukin-5 or -12 - used as vaccine
PT   adjuvants and to treat or prevent microbial infections in livestock.
XX
PS   Claim 6; Page 39-40; 78pp; English.
XX
CC   The sequences given in AAT50755-56 encode ovine interleukin-5 (IL-5).
CC   Ovine IL-5 or IL-12 are used to treat and/or prevent infections in
CC   livestock (esp. cows and sheep), particularly where the animals are
CC   stressed, e.g. during transport. IL-5 and IL-12 can also be used as
CC   adjuvants in vaccines for veterinary use (partic. weakly immunogenic
CC   subunit or synthetic peptide vaccines). They may also be used to treat
CC   cancer, immunosuppression and allergy, to enhance/suppress the
CC   reproductive system and to promote growth or early maturity. Optionally
CC   interleukin can be delivered from constructs or delivery cells and
CC   antibodies are useful in enzyme immunoassays for rapid diagnosis of
CC   infection. The interleukins are immunopotentiators, especially IL-5
CC   promotes growth of early haematopoietic progenitor cells and generation
CC   of cytotoxic cells from thymocytes, also it stimulates production and
CC   secretion of IgM and IgA (in synergism with bacterial endotoxin). IL-12
CC   induces production of gamma-interferon by, and proliferation of, T and NK
CC   cells and increases the (non-)specific cytolytic lymphocyte response. The
CC   genetic constructs can also be used for in vitro production of IL-5 or -
CC   12. (Updated on 17-OCT-2003 to standardise OS field)
XX
FH   Key             Location/Qualifiers
FH
FT   CDS             46..444
FT                   /*tag= a
FT                   /product= "Ovine_IL-5"
FT   exon            46..183
FT                   /*tag= b
FT                   /number= 1
FT   exon            184..216
FT                   /*tag= c
FT                   /number= 2
FT   exon            217..345
FT                   /*tag= d
FT                   /number= 3
FT   exon            346..480
FT                   /*tag= e
FT                   /number= 4
XX
SQ   Sequence 520 BP; 166 A; 99 C; 124 G; 131 T; 0 U; 0 Other;
```

Qy   100 CCATGAATAGACTGGTGGTGGCAGAGACCTTGACACTGCTCTCCAC 142
              ||||||||||||||||||||||||||||||||||||||||||||||
Db   113 CCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCAC 155

RESULT 12
AA244265
ID   AA244265 standard; DNA; 838 BP.
XX
AC   AA244265;
XX
DT   31-MAR-2000 (first entry)
XX
DE   Porcine IL-5 DNA.
XX
KW   Pig; vaccine; cysticercosis; protective antigen; cC1; cC3; cC4;
KW   tenial cysticercus; gamma interferon; IFN-gamma; interleukin 5; IL-5; ss.
OS   Sus scrofa.
XX
PN   CN1231339-A.
PD   13-OCT-1999.
XX
PF   29-JAN-1999; 99CN-00113447.
PR   29-JAN-1999; 99CN-00113447.
XX
PA   (UYTW-) UNIV NO 2 MILITARY MEDICAL PLA.
XX
PI   Sun S, Dai J;
XX
DR   WPI; 2000-087904/08.
XX
PT   Nucleic acid vaccine for cysticercosis co-contracted by human and pig.
XX
PS   Claim 3; Page 9; 21pp; Chinese.
XX
CC   This invention describes a novel nucleic acid vaccine for preventing and
CC   curing human and pork cysticercosis. The invention involves the formation
CC   of a eukaryotic expression plasmid from fusion transcript expression unit
CC   consisting of three protective antigen genes (cC1, cC3 and cC4) of pig
CC   tenial cysticercus and coexpression unit of related cell factor gamma
CC   interferon (IFN-gamma) and pork interleukin 5 (IL-5)] genes. The
CC   production and purification process of said nucleic acid vaccine is
CC   simple and convenient, the physical and chemical properties of the
CC   vaccine are stable, and the vaccine is easy to store and transport, and
CC   possesses effective immunological protective function for human and pig
CC   cysticercosis. This sequence represents the pig IL-5 gene used in the
CC   method of the invention
XX
SQ   Sequence 838 BP; 280 A; 148 C; 171 G; 239 T; 0 U; 0 Other;

Query Match   2.6%; Score 43; DB 2; Length 520;
Best Local Similarity   100.0%; Pred. No. 7.2e-06;
Matches   43; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   113 CCATGAATAGACTGGTGGTGGCAGAGACCTTGACACTGCTCTCCAC 155

RESULT 13
ABV56577/c
ID   ABV56577 standard; cDNA; 357 BP.
XX
AC   ABV56577;
XX

Qy   43 ATTTGAGTTTGCTAGCTCTTGGGGCTGCCCTATGTTTCTGCC 83
              ||||||||||||||||||||||||||||||||||||||||||
Db   61 ATTTGAGTTTGCTAGCTCTTGGGGCTGCCCTATGTTTCTGCC 101

Query Match   2.5%; Score 41; DB 3; Length 838;
Best Local Similarity   100.0%; Pred. No. 3.5e-05;
Matches   41; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

DT   17-SEP-2002 (first entry)
XX
DE   Human prostate expression marker cDNA 56568.
XX
KW   Human; prostate cancer; cytostatic; carcinogen; pharmacodyanamic marker;
KW   pharmacogenomic marker; gene; ss.
OS   Homo sapiens.
XX
PN   WO20160860-A2.
PD   23-AUG-2001.
XX
PF   20-FEB-2001; 2001WO-US005171.
XX
PR   17-FEB-2000; 2000US-01833319P.
PR   16-MAR-2000; 2000US-01899662P.
PR   25-MAY-2000; 2000US-0207454P.
PR   09-JUN-2000; 2000US-0211314P.
PR   18-JUL-2000; 2000US-0219007P.
PR   13-DEC-2000; 2000US-0255281P.
XX
PA   (MILL-) MILLENNIUM PREDICTIVE MEDICINE INC.
XX
PI   Schlegel R, Endege WO, Monahan JE;
XX
DR   WPI; 2001-662795/76.
XX
PT   Novel isolated nucleic acid molecule associated with cancerous state of
PT   prostate cells and correlating with presence of prostate cancer, useful
PT   for detecting presence of prostate cancer, stage of prostate cancer.
XX
PS   Claim 1; Page 10911; 11750pp; English.
XX
CC   The invention relates to an isolated nucleic acid molecule (I) comprising
CC   a nucleotide sequence given in Tables 1-9 (ABV00010-ABV62213) of the
CC   specification or its complement. (I) is useful for: (a) assessing whether
CC   a patient is afflicted with prostate cancer; (b) monitoring the
CC   progression of prostate cancer in a patient; (c) assessing the efficacy
CC   of a test compound to inhibit prostate cancer in a patient; (d) assessing
CC   the efficacy of a therapy for inhibiting prostate cancer in a patient;
CC   (e) selecting a composition for inhibiting prostate cancer in a patient;
CC   (f) assessing the prostate cell carcinogenic potential of a compound; (g)
CC   determining whether the prostate cancer has metastasized in a patient; (h)
CC   assessing the aggressiveness or indolence of prostate cancer in a patient
CC   ; (I) is also useful as a pharmacodyanamic or pharmacogenomic marker
XX
SQ   Sequence 357 BP; 104 A; 93 C; 90 G; 69 T; 0 U; 1 Other;

Query Match   1.6%; Score 26; DB 5; Length 357;
Best Local Similarity   100.0%; Pred. No. 11;
Matches   26; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1458 TTTTTTTTTTTTTTTTTTTTTACAAGAAT 1483
              |||||||||||||||||||||||||||||
Db   69 TTTTTTTTTTTTTTTTTTTTTTACAAGAAT 44

RESULT 14
AAH92592
ID   AAH92592 standard; DNA; 700 BP.
XX
AC   AAH92592;
XX
DT   09-OCT-2001 (first entry)
XX
DE   Human inflammatory bowel disease related gene fragment IGR1292a.
XX
KW   Human; inflammatory bowel disease; Crohn's disease; ulcerative colitis;
KW   single nucleotide polymorphism; SNP; chromosome 19p13; paternity test;
KW   chromosome 5q31-33; forensic test; gene therapy; ds.
OS   Homo sapiens.

RESULT 15

PN	WO20014251l-A2.
XX	
PD	14-JUN-2001.
XX	
PF	11-DEC-2000; 2000WO-US033632.
PR	99US-0170257P.
PR	10-APR-2000; 2000US-0196046P.
XX	
PA	(WHED) WHITEHEAD INST BIOMEDICAL RES.
PA	(ELLI-) ELLIPSIS BIOTHERAPEUTICS CORP.
XX	
PI	Daly M, Hudson TJ, Lander ES, Rioux J, Siminovitch K;
XX	
DR	WPI; 2001-367874/38.
XX	
PT	Testing for the presence of polymorphisms associated with inflammatory
PT	bowel disease, using a hybridization assay.
XX	
PS	Disclosure; Page 261-262; 463pp; English.

The present invention describes a method for detecting the presence of
polymorphisms associated with inflammatory bowel diseases such as
ulcerative colitis and Crohn's disease. The methods can be used to detect
the presence of genetic polymorphisms associated with inflammatory bowel
disease and correlating their occurrence with disease states. They may be
used in this way for phenotypic correlations, forensics, paternity
testing, medicine and genetic analysis. The present sequence is a gene
containing a polymorphic site described in the exemplification of the
invention

SQ Sequence 700 BP; 216 A; 101 C; 125 G; 258 T; 0 U; 0 Other;

Qy 399 ATAAAAAATGTAAGTTAAATTATATGATT 424
           |||||||||||||||||||||||||||||
Db 183 ATAAAAAATGTAAGTTAAATTATATGATT 208

Query Match 1.6%; Score 26; DB 4; Length 700;
Best Local Similarity 100.0%; Pred. No. 9.6;
Matches 26; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

DR	WPI; 2001-016244/02.
DR	P-PSDB; AAB48093.
XX	
PT	New acquired resistance genes Nphl from rice, Oryza sativa, and Nph2-1
PT	and Nph2-2 from wheat, Triticum aestivum, useful for producing transgenic
PT	plants with increased disease resistance.
XX	
PS	Example 1; Page 92; 101pp; English.

The invention relates to acquired resistance genes Nphl from rice, and
Nph2-1 and Nph2-2 from wheat. The Nphl and Nph2 polypeptides can be
expressed by standard recombinant methodology. The Nphl and Nph2
polynucleotides or polypeptides can be used to enhance acquired
resistance in plants (e.g. wheat or rice) to control plant pathogens e.g.
disease resistance. The polynucleotides are also useful to produce probes
and primers useful to detect the polynucleotides (to identify transgenic
plants containing an acquired resistance gene) and to isolate similar
sequences e.g. from other species. The polypeptides can be used to make
antibodies useful to monitor protein production e.g. in transgenic
plants. The present sequence represents a corn clone CPR951 FL cDNA
sequence, used in the identification of acquired resistance genes from
rice and wheat

SQ Sequence 2235 BP; 630 A; 466 C; 566 G; 573 T; 0 U; 0 Other;

Qy 1458 TTTTTTTTTTTTTTTTTTTTTTACAAGAAT 1483
            ||||||||||||||||||||||||||||||
Db 2196 TTTTTTTTTTTTTTTTTTTTTTACAAGAAT 2171

Query Match 1.6%; Score 26; DB 4; Length 2235;
Best Local Similarity 100.0%; Pred. No. 7.9;
Matches 26; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Search completed: August 8, 2005, 16:37:43
Job time : 1114.38 secs

ID	AAC84351 standard; DNA; 2235 BP.
XX	
AC	AAC84351;
XX	
DT	19-MAR-2001 (first entry)
XX	
DE	Corn clone CPR951 FL cDNA sequence.
XX	
KW	Acquired resistance gene; Nphl; Nph2; rice; Nph2-1; Nph2-2; wheat;
KW	plant pathogen; transgenic; disease resistance; corn; Nprl; ss.
XX	
OS	Zea mays.
XX	

FH Key   Location/Qualifiers
FT CDS   261..1491
FT   /*tag= a

PN	WO20070069-A1.
XX	
PD	23-NOV-2000.
XX	
PF	12-MAY-2000; 2000WO-US013307.
PR	13-MAY-1999; 99US-0133965P.
XX	
PA	(MONS) MONSANTO CO.
XX	
PI	Bougri OV, Rommens CMT, Srivastava N, Swords KM;

OM nucleic - nucleic search, using sw model

Copyright (c) 1993 - 2005 Compugen Ltd.

GenCore version 5.1.6

Run on: August 8, 2005, 01:09:58 ; Search time 337.649 seconds
(without alignments)
8034.812 Million cell updates/sec

Title: US-10-787-382-18
Perfect score: 1658
Sequence: 1 aggcaaacactgaacattc.........gtagtggaagatttggaga 1658

Scoring table: OLIGO_NUC
                Gapop 60.0 , Gapext 60.0
                Gapop 60.0 , Gapext 60.0

Searched: 1202784 seqs, 818318359 residues

Word size :   0

Total number of hits satisfying chosen parameters: 2405568 ,

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database :   Issued_Patents_NA:*
                1: /cgn2_6/ptodata/1/ina/5A_COMB.seq:*
                2: /cgn2_6/ptodata/1/ina/5B_COMB.seq:*
                3: /cgn2_6/ptodata/1/ina/6A_COMB.seq:*
                4: /cgn2_6/ptodata/1/ina/6B_COMB.seq:*
                5: /cgn2_6/ptodata/1/ina/pCTUS_COMB.seq:*
                6: /cgn2_6/ptodata/1/ina/backfiles1.seq:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	Match	DB	ID	Description
1	170	10.3	610	4	US-09-322-409-80	Sequence 80, Appl
c 2	170	10.3	610	4	US-09-322-409-82	Sequence 82, Appl
c 3	170	10.3	610	4	US-09-451-527-80	Sequence 80, Appl
c 4	170	10.3	610	4	US-09-451-527-82	Sequence 82, Appl
c 5	144	8.7	402	4	US-09-322-409-83	Sequence 83, Appl
c 6	144	8.7	402	4	US-09-322-409-84	Sequence 84, Appl
c 7	144	8.7	402	4	US-09-451-527-83	Sequence 83, Appl
c 8	144	8.7	402	4	US-09-451-527-84	Sequence 84, Appl
c 9	144	8.7	405	4	US-09-371-615A-1	Sequence 1, Appli
c 10	129	7.8	345	4	US-09-322-409-85	Sequence 85, Appl
c 11	129	7.8	345	4	US-09-322-409-87	Sequence 87, Appl
c 12	129	7.8	345	4	US-09-451-527-85	Sequence 85, Appl
c 13	129	7.8	345	4	US-09-451-527-87	Sequence 87, Appl
c 14	26	1.6	2235	4	US-09-569-804-20	Sequence 20, Appl
c 15	26	1.6	3230	3	US-09-280-799-78	Sequence 78, Appl
c 16	26	1.6	3230	6	5324640-1	Patent No. 5324640
c 17	26	1.6	3230	6	5324640-1	Patent No. 5324640
c 18	25	1.5	29485	4	US-09-785-381-6	Sequence 6, Appli
c 19	24	1.4	601	4	US-09-949-016-178377	Sequence 178377,
c 20	24	1.4	3078	4	US-09-248-796A-6470	Sequence 6470, Ap
c 21	24	1.4	3182	1	US-08-188-582-12	Sequence 12, Appl
c 22	24	1.4	5239	4	US-08-646-715-12	Sequence 12, Appl
c 23	24	1.4	102256	4	US-09-949-016-14980	Sequence 14980, A
c 24	24	1.4	152524	4	US-09-949-016-16858	Sequence 16858, A
c 25	24	1.4	152524	4	US-09-949-016-12683	Sequence 12683, A
c 26	24	1.4	152524	4	US-09-949-016-13194	Sequence 13194, A
c 27	23	1.4	40	3	US-09-306-290-11	Sequence 11, Appl
c 28	23	1.4	329	4	US-09-640-211A-1702	Sequence 1702, Ap
c 29	23	1.4	442	3	US-09-372-422A-35	Sequence 35, Appl
c 30	23	1.4	601	4	US-09-949-016-55697	Sequence 55697, A
c 31	23	1.4	601	4	US-09-949-016-57672	Sequence 57672, A
c 32	23	1.4	601	4	US-09-949-016-64595	Sequence 64595, A
c 33	23	1.4	601	4	US-09-949-016-65669	Sequence 65669, A
c 34	23	1.4	601	4	US-09-949-016-149441	Sequence 149441,
c 35	23	1.4	601	4	US-09-949-016-165661	Sequence 165661,
c 36	23	1.4	601	4	US-09-949-016-185111	Sequence 185111,
c 37	23	1.4	601	4	US-09-949-016-185112	Sequence 185112,
c 38	23	1.4	601	4	US-09-949-016-185113	Sequence 185113,
c 39	23	1.4	601	4	US-09-949-016-185143	Sequence 185143,
c 40	23	1.4	601	4	US-09-949-016-185144	Sequence 185144,
c 41	23	1.4	601	4	US-09-949-016-185145	Sequence 185145, A
c 42	23	1.4	725	4	US-09-270-767-14605	Sequence 14605, A
c 43	23	1.4	920	4	US-09-270-767-14375	Sequence 14375, A
c 44	23	1.4	1017	3	US-08-849-751-1	Sequence 1, Appli
c 45	23	1.4	1017	3	US-09-478-816-1	Sequence 1, Appli

ALIGNMENTS

RESULT 1
US-09-322-409-80
; Sequence 80, Application US/0932409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 80
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (29)..(430)
US-09-322-409-80

Query Match   10.3%; Score 170; DB 4; Length 610;
Best Local Similarity   100.0%; Pred. No. 1.2e-61;
Matches 170; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGTTC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGTTC 62

Qy   61 TTGGGGGCTGCCTATGTTTTCTGCCTTTGCTGTAGAAAATCCCATGAATGAACTGGTGGCAG 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   63 TTGGGGGCTGCCTATGTTTTCTGCCTTTGCTGTAGAAAATCCCATGAATGAACTGGTGGCAG 122

Qy 121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 170
          ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 123 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 172

RESULT 2
US-09-322-409-82/c
; Sequence 82, Application US/0932409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee

; APPLICANT: Yang, Shunin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
; US-09-322-409-82
; SEQ ID NO 82
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris

US-09-322-409-82

Query Match   10.3%; Score 170; DB 4; Length 610;
Best Local Similarity 100.0%; Pred. No. 1.2e-61;
Matches 170; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   608 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 549

Qy   61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCAG 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   548 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCAG 489

Qy   121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGG 170
        ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   488 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGG 439

RESULT 3
US-09-451-527-80
; Sequence 80, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shunin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 80
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (29)..(430)

US-09-451-527-80

Query Match   10.3%; Score 170; DB 4; Length 610;
Best Local Similarity 100.0%; Pred. No. 1.2e-61;
Matches 170; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 62

Qy   61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCAG 120

Db   63 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCAG 122
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Qy   121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGG 170
        |||||||||||||||||||||||||||||||||||||||||||||||||||
Db   123 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGG 172

RESULT 4
US-09-451-527-82/c
; Sequence 82, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shunin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 82
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; US-09-451-527-82

Query Match   10.3%; Score 170; DB 4; Length 610;
Best Local Similarity 100.0%; Pred. No. 1.2e-61;
Matches 170; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   608 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 549

Qy   61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCAG 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   548 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGGCAG 489

Qy   121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGG 170
        ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   488 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGG 439

RESULT 5
US-09-322-409-83
; Sequence 83, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shunin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 83
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris

US-09-322-409-83

```
Query Match          8.7%;   Score 144;   DB 4;   Length 402;
Best Local Similarity 100.0%;  Pred. No. 9.7e-51;
Matches 144;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy   27 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 86
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 60

Qy   87 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACTCAT 146
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy  147 CGAACTTGGCTGATAGGCGGATGGG 170
        |||||||||||||||||||||||||
Db  121 CGAACTTGGCTGATAGGCGGATGGG 144
```

RESULT 6
US-09-322-409-84/c
; Sequence 84, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT.FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 84
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-322-409-84

```
Query Match          8.7%;   Score 144;   DB 4;   Length 402;
Best Local Similarity 100.0%;  Pred. No. 9.7e-51;
Matches 144;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy   27 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 86
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  402 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 343

Qy   87 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACTCAT 146
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  342 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACTCAT 283

Qy  147 CGAACTTGGCTGATAGGCGGATGGG 170
        |||||||||||||||||||||||||
Db  282 CGAACTTGGCTGATAGGCGGATGGG 259
```

RESULT 7
US-09-451-527-83
; Sequence 83, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 83
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-451-527-83

```
Query Match          8.7%;   Score 144;   DB 4;   Length 402;
Best Local Similarity 100.0%;  Pred. No. 9.7e-51;
Matches 144;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy   27 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 86
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 60

Qy   87 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACTCAT 146
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy  147 CGAACTTGGCTGATAGGCGGATGGG 170
        |||||||||||||||||||||||||
Db  121 CGAACTTGGCTGATAGGCGGATGGG 144
```

RESULT 8
US-09-451-527-84/c
; Sequence 84, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 84
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-451-527-84

```
Query Match          8.7%;   Score 144;   DB 4;   Length 402;
Best Local Similarity 100.0%;  Pred. No. 9.7e-51;
Matches 144;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy   27 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 86
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  402 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 343

Qy   87 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACTCAT 146
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  342 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGAGACCTTGACACTGCTCTCCACTCAT 283

Qy  147 CGAACTTGGCTGATAGGCGGATGGG 170
        |||||||||||||||||||||||||
Db  282 CGAACTTGGCTGATAGGCGGATGGG 259
```

RESULT 9
US-09-371-615A-1
; Sequence 1, Application US/09371615A
; Patent No. 6537781
; GENERAL INFORMATION:
; APPLICANT: IDEXX LABORATORIES
; TITLE OF INVENTION: METHODS AND COMPOSITIONS CONCERNING
; TITLE OF INVENTION: CANINE INTERLEUKIN 5
; FILE REFERENCE: 0360400170USU00
; CURRENT APPLICATION NUMBER: US/09/371,615A
; CURRENT FILING DATE: 1999-08-10
; NUMBER OF SEQ ID NOS: 8
; SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 1
; LENGTH: 405
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-371-615A-1

Query Match   8.7%; Score 144; DB 4; Length 405;
Best Local Similarity   100.0%; Pred. No. 9.7e-51;
Matches 144; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   27 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGGGGCTGCCTATGTTTCTGCCTTT 86
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGGGGGCTGCCTATGTTTCTGCCTTT 60

Qy   87 GCTGTGAGAAAATCCATGAATAGAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 146
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTGAGAAAATCCATGAATAGAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy   147 CGAACTTGGCTGATAGGCGGATGGG 170
              |||||||||||||||||||||||||
Db   121 CGAACTTGGCTGATAGGCGGATGGG 144

RESULT 10
US-09-322-409-85
; Sequence 85, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 85
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(345)
US-09-322-409-85

Query Match   7.8%; Score 129; DB 4; Length 345;
Best Local Similarity   100.0%; Pred. No. 1.9e-44;
Matches 129; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1276 CACCAAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 1335
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CACCAAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 180

Qy   1336 CACCGGGGAGGCGTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAAGACACATAGAG 1395
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CACCGGGGAGGCGTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAAGACACATAGAG 240

Qy   1396 CGCCAAAAA 1404
              |||||||||
Db   241 CGCCAAAAA 249

RESULT 11
US-09-322-409-87/c
; Sequence 87, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 87
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-322-409-87

Query Match   7.8%; Score 129; DB 4; Length 345;
Best Local Similarity   100.0%; Pred. No. 1.9e-44;
Matches 129; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1276 CACCAAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 1335
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   225 CACCAAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 166

Qy   1336 CACCGGGGAGGCGTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAAGACACATAGAG 1395
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   165 CACCGGGGAGGCGTGTGGATAAACTATTCCAAAAACTTGTCTTTAATAAAAGAAGACACATAGAG 106

Qy   1396 CGCCAAAAA 1404
              |||||||||
Db   105 CGCCAAAAA 97

RESULT 12
US-09-451-527-85
; Sequence 85, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 85
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:

```
;   NAME/KEY: CDS
;   LOCATION: (1)..(345)
US-09-451-527-85

Query Match          7.8%;  Score 129;  DB 4;  Length 345;
Best Local Similarity  100.0%;  Pred. No. 1.9e-44;
Matches 129;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy  1276 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 1335
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC  180

Qy  1336 CACGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 1395
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CACGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG  240

Qy  1396 CGCCAAAAA 1404
         |||||||||
Db   241 CGCCAAAAA  249
```

```
RESULT 13
US-09-451-527-87/c
;  Sequence 87, Application US/09451527
;  Patent No. 648203
;  GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shumin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C2
;   CURRENT APPLICATION NUMBER: US/09/451,527
;   CURRENT FILING DATE: 1999-12-01
;   EARLIER APPLICATION NUMBER: 09/322,409
;   EARLIER FILING DATE: 1999-05-28
;   EARLIER APPLICATION NUMBER: 60/087,306
;   EARLIER FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 174
;   SOFTWARE: Patentin Ver. 2.0
;
;   SEQ ID NO 87
;   LENGTH: 345
;   TYPE: DNA
;   ORGANISM: Canis familiaris
US-09-451-527-87

Query Match          7.8%;  Score 129;  DB 4;  Length 345;
Best Local Similarity  100.0%;  Pred. No. 1.9e-44;
Matches 129;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy  1276 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC 1335
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   225 CACCAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTGCC  166

Qy  1336 CACGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG 1395
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   165 CACGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAG  106

Qy  1396 CGCCAAAAA 1404
         |||||||||
Db   105 CGCCAAAAA  97
```

```
RESULT 14
US-09-569-804-20/c
;  Sequence 20, Application US/09569804
;  Patent No. 6506962
;  GENERAL INFORMATION:
;   APPLICANT: Bougri, Oleg
;   APPLICANT: Rommens, Caius
;   APPLICANT: Srivastava, Neelam
;   APPLICANT: Swords, Kathleen M
```

```
;   TITLE OF INVENTION: Acquired Resistance Genes in Plants
;   FILE REFERENCE: 38-21(15415)
;   CURRENT APPLICATION NUMBER: US/09/569,804
;   CURRENT FILING DATE: 2000-05-12
;   PRIOR APPLICATION NUMBER: 60/133,965
;   PRIOR FILING DATE: 1999-05-13
;   NUMBER OF SEQ ID NOS: 36
;   SOFTWARE: Patentin Ver. 2.1
;
;   SEQ ID NO 20
;   LENGTH: 2235
;   TYPE: DNA
;   ORGANISM: Zea mays
US-09-569-804-20

Query Match          1.6%;  Score 26;  DB 4;  Length 2235;
Best Local Similarity  100.0%;  Pred. No. 0.29;
Matches 26;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy  1458 TTTTTTTTTTTTTTTTTTTACAAGAAT 1483
         ||||||||||||||||||||||||||
Db  2196 TTTTTTTTTTTTTTTTTTTTACAAGAAT 2171
```

```
RESULT 15
US-09-280-799-78
;  Sequence 78, Application US/09280799
;  Patent No. 6136603
;  GENERAL INFORMATION:
;   APPLICANT: Dean, Nicholas M.
;   APPLICANT: Karras, James G
;   APPLICANT: McKay, Robert
;   TITLE OF INVENTION: ANTISENSE MODULATION OF INTERLEUKIN-5 SIGNAL
;   TITLE OF INVENTION: TRANSDUCTION
;   FILE REFERENCE: ISPH-0340
;   CURRENT APPLICATION NUMBER: US/09/280,799
;   CURRENT FILING DATE: 1999-03-26
;   NUMBER OF SEQ ID NOS: 208
;   SOFTWARE: Patentin Ver. 2.0
;
;   SEQ ID NO 78
;   LENGTH: 3230
;   TYPE: DNA
;   ORGANISM: Homo sapiens
US-09-280-799-78

Query Match          1.6%;  Score 26;  DB 3;  Length 3230;
Best Local Similarity  100.0%;  Pred. No. 0.28;
Matches 26;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy   399 ATAAAAAATGTAAGTTAAATTATTGATT 424
         |||||||||||||||||||||||||||
Db   930 ATAAAAAATGTAAGTTAAATTATTGATT 955
```

```
Search completed: August  8, 2005, 13:43:38
Job time : 338.649 secs
```

THIS PAGE BLANK (USPTO)

OM nucleic - nucleic search, using sw model

Copyright (c) 1993 - 2005 Compugen Ltd.

GenCore version 5.1.6

Run on: August 8, 2005, 05:12:23 ; Search time 1364.34 Seconds
(without alignments)
7877.554 Million cell updates/sec

Title: US-10-787-382-18
Perfect score: 1658
Sequence: 1 aggcaaacactgaacattc..........gtagtggaagatttcggaga 1658

Scoring table: OLIGO_NUC
Gapop 60.0 , Gapext 60.0

Searched: 7297361 seqs, 3241162794 residues

Word size : 0

Total number of hits satisfying chosen parameters: 14594722

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database :　Published Applications NA:*
1: /cgn2_6/ptodata/1/pubpna/US07_PUBCOMB.seq:*
2: /cgn2_6/ptodata/1/pubpna/PCT_NEW_PUB.seq:*
3: /cgn2_6/ptodata/1/pubpna/US06_NEW_PUB.seq:*
4: /cgn2_6/ptodata/1/pubpna/US06_PUBCOMB.seq:*
5: /cgn2_6/ptodata/1/pubpna/US07_NEW_PUB.seq:*
6: /cgn2_6/ptodata/1/pubpna/PCTUS_PUBCOMB.seq:*
7: /cgn2_6/ptodata/1/pubpna/US08_NEW_PUB.seq:*
8: /cgn2_6/ptodata/1/pubpna/US08_PUBCOMB.seq:*
9: /cgn2_6/ptodata/1/pubpna/US09A_PUBCOMB.seq:*
10: /cgn2_6/ptodata/1/pubpna/US09B_PUBCOMB.seq:*
11: /cgn2_6/ptodata/1/pubpna/US09C_PUBCOMB.seq:*
12: /cgn2_6/ptodata/1/pubpna/US09_NEW_PUB.seq:*
13: /cgn2_6/ptodata/1/pubpna/US10A_PUBCOMB.seq:*
14: /cgn2_6/ptodata/1/pubpna/US10B_PUBCOMB.seq:*
15: /cgn2_6/ptodata/1/pubpna/US10C_PUBCOMB.seq:*
16: /cgn2_6/ptodata/1/pubpna/US10D_PUBCOMB.seq:*
17: /cgn2_6/ptodata/1/pubpna/US10E_PUBCOMB.seq:*
18: /cgn2_6/ptodata/1/pubpna/US10F_PUBCOMB.seq:*
19: /cgn2_6/ptodata/1/pubpna/US10G_PUBCOMB.seq:*
20: /cgn2_6/ptodata/1/pubpna/US10H_PUBCOMB.seq:*
21: /cgn2_6/ptodata/1/pubpna/US10I_PUBCOMB.seq:*
22: /cgn2_6/ptodata/1/pubpna/US10J_PUBCOMB.seq:*
23: /cgn2_6/ptodata/1/pubpna/US11_NEW_PUB.seq:*
24: /cgn2_6/ptodata/1/pubpna/US11A_PUBCOMB.seq:*
25: /cgn2_6/ptodata/1/pubpna/US60_NEW_PUB.seq:*
26: /cgn2_6/ptodata/1/pubpna/US60_PUBCOMB.seq:*

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	1658	100.0	1658	19	US-09-755-633-18	Sequence 18, Appl
2	1658	100.0	1658	19	US-10-787-382-18	Sequence 18, Appl
3	1335	80.5	1658	9	US-09-755-633-19	Sequence 19, Appl
4	1335	80.5	1658	19	US-10-787-382-19	Sequence 19, Appl
5	406	24.5	671	9	US-09-755-633-21	Sequence 21, Appl
6	406	24.5	671	19	US-10-787-382-21	Sequence 21, Appl
7	170	10.3	610	9	US-09-755-633-4	Sequence 4, Appli

Pred. No is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

c	8	170	10.3	610	9	US-10-218-654-82	Sequence 6, Appli
c	9	170	10.3	610	14	US-10-218-654-82	Sequence 82, Appl
c	10	170	10.3	610	14	US-10-218-654-80	Sequence 80, Appl
c	11	170	10.3	610	15	US-10-262-439-80	Sequence 80, Appl
c	12	170	10.3	610	15	US-10-262-439-82	Sequence 82, Appl
c	13	170	10.3	610	19	US-10-787-382-4	Sequence 4, Appli
c	14	170	10.3	610	19	US-10-787-382-6	Sequence 6, Appli
c	15	144	8.7	402	9	US-09-755-633-7	Sequence 7, Appli
c	16	144	8.7	402	9	US-09-755-633-8	Sequence 8, Appli
c	17	144	8.7	402	14	US-10-218-654-83	Sequence 83, Appl
c	18	144	8.7	402	14	US-10-218-654-84	Sequence 84, Appl
c	19	144	8.7	402	15	US-10-262-439-83	Sequence 83, Appl
c	20	144	8.7	402	15	US-10-262-439-84	Sequence 84, Appl
c	21	144	8.7	402	19	US-10-787-382-8	Sequence 8, Appli
c	22	144	8.7	402	19	US-10-787-382-7	Sequence 7, Appli
c	23	129	7.8	345	9	US-09-755-633-9	Sequence 9, Appli
c	24	129	7.8	345	9	US-09-755-633-11	Sequence 11, Appl
c	25	129	7.8	345	14	US-10-218-654-85	Sequence 85, Appl
c	26	129	7.8	345	14	US-10-218-654-87	Sequence 87, Appl
c	27	129	7.8	345	15	US-10-262-439-85	Sequence 85, Appl
c	28	129	7.8	345	15	US-10-262-439-87	Sequence 87, Appl
c	29	129	7.8	345	19	US-10-787-382-9	Sequence 9, Appli
c	30	129	7.8	345	19	US-10-787-382-11	Sequence 11, Appl
c	31	28	1.7	2122	18	US-10-424-599-35126	Sequence 35126, A
c	32	26	1.6	357	20	US-10-357-930-55596	Sequence 56596, A
c	33	26	1.6	394	19	US-10-318-780-99632	Sequence 99632, A
c	34	26	1.6	2235	15	US-10-318-780-20	Sequence 20, Appl
c	35	26	1.6	3230	9	US-09-800-629A-78	Sequence 78, Appl
c	36	26	1.6	3230	19	US-10-679-532-78	Sequence 78, Appl
c	37	26	1.6	3230	22	US-10-880-101A-89	Sequence 89, Appl
c	38	26	1.6	3241	22	US-10-880-101A-91	Sequence 91, Appl
c	39	26	1.6	407	14	US-10-198-846-13075	Sequence 13075, A
c	40	25	1.5	461	14	US-10-198-846-6011	Sequence 6011, Ap
c	41	25	1.5	493	20	US-10-723-860-634	Sequence 634, App
c	42	25	1.5	516	18	US-10-621-901-295	Sequence 295, App
c	43	25	1.5	516	19	US-10-437-963-51964	Sequence 51964, A
c	44	25	1.5	586	13	US-10-027-632-220494	Sequence 220494,
c	45	25	1.5	586	17	US-10-027-632-220494	Sequence 220494,

ALIGNMENTS

RESULT 1
US-09-755-633-18
Sequence 18, Application US/09755633
; Patent No. US2002012720DA1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shunin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/09/755,633
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: Patentin Ver. 2.1
;
; SEQ ID NO 18
; LENGTH: 1658
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: intron
; LOCATION: (171)..(373)
; NAME/KEY: intron
; LOCATION: (407)..(1275)
; NAME/KEY: intron
; LOCATION: (1405)..(1522)

US-09-755-633-18

```
Query Match        100.0%;   Score 1658;  DB 9;  Length 1658;
Best Local Similarity  100.0%;   Pred. No. 0;
Matches 1658;  Conservative 0;  Mismatches 0;  Indels 0;  Gaps 0;

Qy    1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60

Qy   61 TTGGGGCTGCCTATGTTTCTCGCCTTTGCTGTGTAGAAAATCCCATGAATAGACTGGGCAG 120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 TTGGGGCTGCCTATGTTTCTCGCCTTTGCTGTGTAGAAAATCCCATGAATAGACTGGGCAG 120

Qy  121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGGCGGTAATTTTCT 180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGGCGGTAATTTTCT 180

Qy  181 TTTTGATTCCTACAGTTCTTTAAAATGCATGGGTAATTGGCTGATAGGGCTAGTTTTTAAA 240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 TTTTGATTCCTACAGTTCTTTAAAATGCATGGGTAATTGGCTGATAGGGCTAGTTTTTAAA 240

Qy  241 GATCCATTATCAATAATGAAGTAATGAGTGTTAATATATATATAATATAATATAATGTTAC 300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 GATCCATTATCAATAATGAAGTAATGAGTGTTAATATATATATAATATAATATAATGTTAC 300

Qy  301 TCAGAAGAAATTATATTATTTAAAAGTTATGAAACCTTACAATACATTAAATATATAATTGTTTC 360
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301 TCAGAAGAAATTATATTATTTAAAAGTTATGAAACCTTACAATACATTAAATATATAATTGTTTC 360

Qy  361 CTTTCTTTTTTCAGAATCCTGATGATCCTACTCCTGAAAATAAAAATGTAAGTAAAATTAT 420
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  361 CTTTCTTTTTTCAGAATCCTGATGATCCTACTCCTGAAAATAAAAATGTAAGTAAAATTAT 420

Qy  421 GATTTGATAAAATGATTACATGAATCAGTTCATATTTTAAGCTATAAAGTTATCAGTTAA 480
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  421 GATTTGATAAAATGATTACATGAATCAGTTCATATTTTAAGCTATAAAGTTATCAGTTAA 480

Qy  481 CATTTGGGATGTATTTAATTTAATCATTTATTTTATGTCATGTGGGATGGATGAAAGTTGC 540
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  481 CATTTGGGATGTATTTAATTTAATCATTTATTTTATGTCATGTGGGATGGATGAAAGTTGC 540

Qy  541 TTATGAATAATTAGGAATATGGCTGTTAGGAATGGCTCTACAATATAATTAAGTAGAATCCATTAAG 600
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  541 TTATGAATAATTAGGAATATGGCTGTTAGGAATGGCTCTACAATATAATTAAGTAGAATCCATTAAG 600

Qy  601 CAAGTGGGATCAGGCCCTTTTTTGATGTTGTCAGTTCTCCATTCTCAAAAGAGCCTGTGTCA 660
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  601 CAAGTGGGATCAGGCCCTTTTTTGATGTTGTCAGTTCTCCATTCTCAAAAGAGCCTGTGTCA 660

Qy  661 GGCATTCTTTCCAAAAGAATTCCATATTGGGTCAGAGATACTTCCTAGGGTCCATTCACC 720
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  661 GGCATTCTTTCCAAAAGAATTCCATATTGGGTCAGAGATACTTCCTAGGGTCCATTCACC 720

Qy  721 TCTCGTCGTTGGCTTTCCTCCACCTCAACGTTTTTTCTGAAAGTAGTACTAGCACAACTTGGGGTTAT 780
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  721 TCTCGTCGTTGGCTTTCCTCCACCTCAACGTTTTTTCTGAAAGTAGTACTAGCACAACTTGGGGTTAT 780

Qy  781 ATTTTTAGAATTATGGTCAGTAGACATGAGAAATATACAGTGAAGTCCTATATTAATAGTC 840
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  781 ATTTTTAGAATTATGGTCAGTAGACATGAGAAATATACAGTGAAGTCCTATATTAATAGTC 840

Qy  841 ACTTCCACATATTTAAATGATTTTAACTCTAATGGAATCATATACACTCTGGAGTAGTGTC 900
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  841 ACTTCCACATATTTAAATGATTTTAACTCTAATGGAATCATATACACTCTGGAGTAGTGTC 900

Qy  901 ATGGTCATTAAAATGTTAAAAAGTGAATCATTAGTCTAAATAGAATAAGAATAAAATTACCA 960
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  901 ATGGTCATTAAAATGTTAAAAAGTGAATCATTAGTCTAAATAGAATAAGAATAAAATTACCA 960

Qy  961 GCTAGAAACTATACGAGGAAATTCTGAGGTGAGGTGAGGTAAATCAGTTGTATTATATAC 1020
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  961 GCTAGAAACTATACGAGGAAATTCTGAGGTGAGGTGAGGTAAATCAGTTGTATTATATAC 1020

Qy 1021 CTCGTAAGCATTTATTTTTCATTAAATCATTTCATTTATATCATTTGTAACACTTCTCAGT 1080
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1021 CTCGTAAGCATTTATTTTTCATTAAATCATTTCATTTATATCATTTGTAACACTTCTCAGT 1080

Qy 1081 AATTATTATAAACATCATTTACTTACTTATGGTAATTATAGCTTAGTTATAAGGTAATAAGGTGTTTCCCACC 1140
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1081 AATTATTATAAACATCATTTACTTACTTATGGTAATTATAGCTTAGTTATAAGGTAATAAGGTGTTTCCCACC 1140

Qy 1141 TGGAAAAGACACAAGTAAAAAACCTCTTGGGAGAAGGGAACTTGTGTAAACCCCACAAAAC 1200
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1141 TGGAAAAGACACAAGTAAAAAACCTCTTGGGAGAAGGGAACTTGTGTAAACCCCACAAAAC 1200

Qy 1201 AAAGTCTAACTTTTTTGGACCAAAATTTTTATTTTTATGCCTTGTTTTGATGAATTATTTTTTTAAA 1260
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1201 AAAGTCTAACTTTTTTGGACCAAAATTTTTATTTTTATGCCTTGTTTTGATGAATTATTTTTTTAAA 1260

Qy 1261 ATCTTCCTCATTTAGCACCAACTGTGCCATTAAAGAAGAGTTTTTCAGGGTATAGGACACATTG 1320
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1261 ATCTTCCTCATTTAGCACCAACTGTGCCATTAAAGAAGAGTTTTTCAGGGTATAGGACACATTG 1320

Qy 1321 AAGAACCAAAACTGCCCACGGGGGAGGCTGGGGAATAAAACTATTCCAAAAACTTGTCTTTAATA 1380
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1321 AAGAACCAAAACTGCCCACGGGGGAGGCTGGGGAATAAAACTATTCCAAAAACTTGTCTTTAATA 1380

Qy 1381 AAAGAACAATAGAGCGCCCAAAAAGTAAGTTAAGCTAATAACACTATTAGTTAAGTATAT 1440
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1381 AAAGAACAATAGAGCGCCCAAAAAGTAAGTTAAGCTAATAACACTATTAGTTAAGTATAT 1440

Qy 1441 TTGTCTGACTCTGCCTCGTCTGTTTTTTTTTTTTTTTTACGAAGAATTGACAGTTTCCTACAAT 1500
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1441 TTGTCTGACTCTGCCTCGTCTGTTTTTTTTTTTTTTTTACGAAGAATTGACAGTTTCCTACAAT 1500

Qy 1501 ATCTCCCTCGTTCTTTTCTTTGGTGTAATAAAACAGAGAGAAAGGTGCGCAGGAGAGAAGATGGAGAGTGACAAAGTT 1560
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1501 ATCTCCCTCGTTCTTTTCTTTGGTGTAATAAAACAGAGAGAAAGGTGCGCAGGAGAGAAGATGGAGAGTGACAAAGTT 1560

Qy 1561 CCTAGACTACCTGCAAGTATTTCTTCGGTGTAATAACACCCGAGTGGACACCCAAGAGTTG 1620
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1561 CCTAGACTACCTGCAAGTATTTCTTCGGTGTAATAACACCCGAGTGGACACCCAAGAGTTG 1620

Qy 1621 AGAACAAAACCCGGCTTATTGTAGTGGGAAGATTTTGGGAGA 1658
         ||||||||||||||||||||||||||||||||||||||||||
Db 1621 AGAACAAAACCCGGCTTATTGTAGTGGGAAGATTTTGGGAGA 1658
```

RESULT 2

US-10-787-382-18

Sequence 18, Application US/10787382

Publication No. US20040191868A1

GENERAL INFORMATION:

```
;  LOCATION: (171)..(373)
;  FEATURE:
;  NAME/KEY: intron
;  LOCATION: (407)..(1275)
;  FEATURE:
;  NAME/KEY: intron
;  LOCATION: (1405)..(1522)
US-10-787-382-18

Query Match      100.0%;    Score 1658;   DB 19;  Length 1658;
Best Local Similarity   100.0%;   Pred. No. 0;
Matches 1658;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;
```

```
Qy    1  AGGCAAAACACTGAACATTTCAGAGCTATGAGAATCGCTTCTTGAATTTGAGTTTGCTAGCTC   60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1  AGGCAAAACACTGAACATTTCAGAGCTATGAGAATCGCTTCTTGAATTTGAGTTTGCTAGCTC   60

Qy   61  TTGGGGGCTGCCTATGTGTTTCTGCCTTTGCTGTGTAGAAAATCCCATGAATAGACTGGTGGCAG  120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61  TTGGGGGCTGCCTATGTGTTTCTGCCTTTGCTGTGTAGAAAATCCCATGAATAGACTGGTGGCAG  120

Qy  121  AGACCTTGACACTGCTGTCTCCAACTTGGCCTGATGAGGGCCATAGGGGTAAATTTCT       180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121  AGACCTTGACACTGCTGTCTCCAACTTGGCCTGATGAGGGCCATAGGGGTAAATTTCT       180.

Qy  181  TTTTGATTCCTACACAGTCTCTTTAAAAATGCATGGGGTAATTGGTGGTGGTGGCTAGTTGTTTTTAAA  240
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181  TTTTGATTCCTACACAGTCTCTTTAAAAATGCATGGGGTAATTGGTGGTGGTGGCTAGTTGTTTTTAAA  240

Qy  241  GATCCATTATCAATAATGAAGTAAGTAGTGTTAATAATATAATATATATAAATAATTGTTAATTTTTTTAAA  300
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241  GATCCATTATCAATAATGAAGTAAGTAGTGTTAATAATATAATATATATAAATAATTGTTAATTTTTTTAAA  300

Qy  301  TCAGAAGAATTATATATTATGAAACCTTACAAATACACATTAATATTAAAATGAAATGTTTTTC  360
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301  TCAGAAGAATTATATATTATGAAACCTTACAAATACACATTAATATTAAAATGAAATGTTTTTC  360

Qy  361  CTTTCTTTTTCAGAACCTGATGATTCCTACTCCTGAAAAATAAAATGTAAGTTAAGTTAAAATTAT  420
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  361  CTTTCTTTTTCAGAACCTGATGATTCCTACTCCTGAAAAATAAAATGTAAGTTAAGTTAAAATTAT  420

Qy  421  GATTTGATAAAATGATTACATGAATCAGTTCATAATTTAAGCTATAAAAGTATCAGTTAA       480
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  421  GATTTGATAAAATGATTACATGAATCAGTTCATAATTTAAGCTATAAAAGTATCAGTTAA       480

Qy  481  CATTGGGATGATTTAATTTATTTATCTATTTTGTTTTATGTGTCGGATGTAAATTATGTGC     540
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  481  CATTGGGATGATTTAATTTATTTATCTATTTTGTTTTATGTGTCGGATGTAAATTATGTGC     540

Qy  541  TTATGAATAATTAGGAATGGTGTTAGGAATGGCCTCTACAATATTAAATTAAGTAGAATCCATTAAG  600
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  541  TTATGAATAATTAGGAATGGTGTTAGGAATGGCCTCTACAATATTAAATTAAGTAGAATCCATTAAG  600

Qy  601  CAAGTGGATCAGGCCCCTTTTTTGATGTTGTCAGTTCTCCATCTCAAAAGAGCCTTCGTGTCA     660
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  601  CAAGTGGATCAGGCCCCTTTTTTGATGTTGTCAGTTCTCCATCTCAAAAGAGCCTTCGTGTCA     660

Qy  661  GGCATTCTTTCCAAAAGAAATTCCATATTGGGTCAGAGATACTTCCTAGGCTCCATTCACC     720
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  661  GGCATTCTTTCCAAAAGAAATTCCATATTGGGTCAGAGATACTTCCTAGGCTCCATTCACC     720

Qy  721  TCTGTCGTTGGCCTTTCCTCACCTCAAAGTTTTTTTCTGAAAGTACTACTAGCCAACTTGGGGTTAT  780
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  721  TCTGTCGTTGGCCTTTCCTCACCTCAAAGTTTTTTTCTGAAAGTACTACTAGCCAACTTGGGGTTAT  780

Qy  781  ATTTTTTAGAATTATGGTCAGTAGACATGAAAATATATCAGTGAAGTCCTATATTAATTAGTC     840
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  781  ATTTTTTAGAATTATGGTCAGTAGACATGAAAATATATCAGTGAAGTCCTATATTAATTAGTC     840

Qy  841  ACTTCCACATATTTAAATGATTTTTTAACTCTAAATGGAATCATATACATCTCGAGTATGTC        900
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  841  ACTTCCACATATTTAAATGATTTTTTAACTCTAAATGGAATCATATACATCTCGAGTATGTC        900
```

```
Qy  901  ATGGTCATTATTAAAATGTTAAAAAGTTGATATCATTAGTCTAAATAGAATAAAATTACCA    960
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  901  ATGGTCATTATTAAAATGTTAAAAAGTTGATATCATTAGTCTAAATAGAATAAAATTACCA    960

Qy 1021  CTCGTAAGCATTTATTTTTCATTAATCATTCATTTATATTCATTTGTAACACTTCTCCAGT   1080
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1021  CTCGTAAGCATTTATTTTTCATTAATCATTCATTTATATTCATTTGTAACACTTCTCCAGT   1080

Qy  961  GCTAGAACTATACGAGAGAAATTCTGAGGTGAGGTAAATCAGTGAAGGCAGTTGTTATTATAC  1020
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  961  GCTAGAACTATACGAGAGAAATTCTGAGGTGAGGTAAATCAGTGAAGGCAGTTGTTATTATAC  1020

Qy 1081  AATTATATAAAACATCATTACTTACTTATGTGTAATTATCATTTATATCATTTGGTTTCCCACC   1140
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1081  AATTATATAAAACATCATTACTTACTTATGTGTAATTATCATTTATATCATTTGGTTTCCCACC   1140

Qy 1141  TGGAAAAGACACAAGTAAAAACCTCTTGGGAGAACTTGTGTAAGTTAAACCCCACAAAAC   1200
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1141  TGGAAAAGACACAAGTAAAAACCTCTTGGGAGAACTTGTGTAAGTTAAACCCCACAAAAC   1200

Qy 1201  AAAGTCTAACTTTTTGGACCAAAATTTTATGCCTTGTTTGATGAATTATTATTTTTTAAA   1260
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1201  AAAGTCTAACTTTTTGGACCAAAATTTTATGCCTTGTTTGATGAATTATTATTTTTTAAA   1260

Qy 1261  ATCTTCCTTCATTTAGCACCAACTGTCCATTAAAGAGAGTTTTTCAGGGTATAGAACAATTG   1320
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1261  ATCTTCCTTCATTTAGCACCAACTGTCCATTAAAGAGAGTTTTTCAGGGTATAGAACAATTG   1320

Qy 1321  AAGAACCAAACTGCCCACGGGGAGGGCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATA   1380
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1321  AAGAACCAAACTGCCCACGGGGAGGGCTGTGGATAAACTATTCCAAAAACTTGTCTTTAATA   1380

Qy 1381  AAAGAACACATAGAGCGCCCAAAAAGTAAGTTAAAGACATTTGGCAAAAACTTAAGTATAT   1440
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1381  AAAGAACACATAGAGCGCCCAAAAAGTAAGTTAAAGACATTTGGCAAAAACTTAAGTATAT   1440

Qy 1441  TTGTCTGACTCTGCCCGTTTTTTTTTTTTTTACAAGAATTGACAGTTTCCTACAAT   1500
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1441  TTGTCTGACTCTGCCCGTTTTTTTTTTTTTTACAAGAATTGACAGTTTCCTACAAT   1500

Qy 1501  ATCTCCCTCTGTTCTTTTTTTAACAGAAAAAAGGTGTTCCAGGAGGAGAAGAAGTGACAAAGTT   1560
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1501  ATCTCCCTCTGTTCTTTTTTTAACAGAAAAAAGGTGTTCCAGGAGGAGAAGAAGTGACAAAGTT   1560

Qy 1561  CCTAGACTACCTGCCAAGTATTTTCTTGGGTGTAATAAACACCGAGTGGGACACCGGAAAGTTG   1620
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1561  CCTAGACTACCTGCCAAGTATTTTCTTGGGTGTAATAAACACCGAGTGGGACACCGGAAAGTTG   1620

Qy 1621  AGAACAAAACCCGCCTTATTGTAGTGGAAGATTTTGGGAGA   1658
         |||||||||||||||||||||||||||||||||||||||||
Db 1621  AGAACAAAACCCGCCTTATTGTAGTGGAAGATTTTGGGAGA   1658
```

```
;  LENGTH: 1658
;  TYPE: DNA
;  ORGANISM: Canis familiaris
US-09-755-633-19

Query Match    80.5%;  Score 1335;  DB 9;  Length 1658;
Best Local Similarity  99.8%;  Pred. No. 0;
Matches 1625;  Conservative  0;  Mismatches  1;  Indels  2;  Gaps  2;

Qy      32  AATGCTTCTCGAATTTGAGTTTGCTAGCTCTTCGGGCGGCTGCCTATGTTTTCTGCCTTTGCTGT     91
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1627  AATGCTTCTCGAATTTGAGTTTGCTAGCTCTTGGGCGGCTGCCTATGTTTTCTGCCTTTGCTGT   1568

Qy      92  AGAAAAATCCCATGAATAGAGACTGGTGGCAGAGAGAGAACCTTGACACTGCCTCTCCACTCATCGAAC    151
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1567  AGAAAAATCCCATGAATAGAGACTGGTGGCAGAGAGAGAACCTTGACACTGCCTCTCCACTCATCGAAC   1508

Qy     152  TTGGCTGATAGGCGATGGGGTAAATTTCTTTTCTTTTTTTGAATTCCTACAGTCTTTAAAATGCATGG    211
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1507  TTGGCTGATAGGCGATGGGGTAAATTTCTTTTCTTTTTTTGAATTCCTACAGTCTTTAAAATGCATGG   1448

Qy     212  GTAATTGGTGCGGTGGTGGGGCTAGTTTTTTTTAAAGATCCATTATCAATAATGAAGTAATGAGTGT    271
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1447  GTAATTGGTGCGGTGGTGGGGCTAGTTTTTTTTAAAGATCCATTATCAATAATGAAGTAATGAGTGT   1388

Qy     272  TAATAATATAT-AATGGGTAACCATGTTACTCAGGAGAATTATATTATTATAAGTTATGTAACC    330
            |||||||||||  |||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1387  TAATAATATATATAATGGGTAACCATGTTACTCAGGAGAATTATATTATTATAAGTTATGTAACC   1328

Qy     331  TTACAACATATACATTAAAAATGAAATGTTGTTTGTTCCTTTCTTTTCTTTTTCAGAACCTGATGATTCCTAC    390
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1327  TTACAACATATACATTAAAAATGAAATGTTGTTTGTTCCTTTCTTTTCTTTTTCAGAACCTGATGATTCCTAC   1268

Qy     391  TCCTGAAAAATAAAAATGTAAGTTAAATTATGATTTGATTGAATTGACATGAATCAGTT    450
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1267  TCCTGAAAAATAAAAATGTAAGTTAAATTATGATTTGATTGAATTGACATGAATCAGTT   1208

Qy     451  TCATATTTTAAGCTATAAAGTATCAGTTAACATTGGGATGATTTAATTTTTTATCTATTTTG    510
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1207  TCATATTTTAAGCTATAAAGTATCAGTTAACATTGGGATGATTTAATTTTTTATCTATTTTG   1148

Qy     511  TTTTTATGTTGTGCGGATGTAAATTATGTTGCTTATGAATATTATTAGGGAATGGGTGT    570
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1147  TTTTTATGTTGTGCGGATGTAAATTATGTTGCTTATGAATATTATTAGGGAATGGGTGT   1088

Qy     571  GCTCTACAATATTAAGTAGAATCCATTAAGCAAGTGGATCAGGCCCTTTTTTGATGGTTGT    630
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1087  GCTCTACAATATTAAGTAGAATCCATTAAGCAAGTGGATCAGGCCCTTTTTTGATGGTTGT   1028

Qy     631  CAGTTCTCCATCTCAAAGAGAGCCTCGTGTCAGGCATTCTTCCAAAAGAAATTCCATATTGG    690
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1027  CAGTTCTCCATCTCAAAGAGCCTCGTGTCAGGCATTCTTCCAAAAGAAATTCCATATTGG    968

Qy     691  GTCAGAGAATACTTCCTAGGGCTCCATTCACCCTCGTCGTTGGCTTTCCTCACCTCAACGTT    750
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     967  GTCAGAGAATACTTCCTAGGGCTCCATTCACCCTCGTCGTTGGCTTTCCTCACCTCAACGTT    908

Qy     751  TTTCTGAAAGTACTAGCAACTTGGGGTTATATATTTTAGAATTATGGTCAGTAGACATGAA    810
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     907  TTTCTGAAAGTACTAGCAACTTGGGGTTATATATTTTAGAATTATGGTCAGTAGACATGAA    848

Qy     811  AATATACAGTGAAGTCCTATATTAATAGTAGTCACTTCACATATATTTAAACTC    870
            ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     847  AATATACAGTGAAGTCCTATATTAATAGTAGTCACTTCACATATATTTAAACTC    788

Qy     871  TAAATGGAATCATATACATCTGGAGTATGTCATGGTCATATATTTAAAAATGTTAAAAAATGTGAT    930
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     787  TAAATGGAATCATATACATCTGGAGTATGTCATGGTCATATATTTAAAAATGTTAAAAAATGTGAT    728

Qy     931  ATCATTAGTCTAAATAGAATAAAATTACCAGCTAGAACTATACGAGGAAATTCTGAGGTG    990
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     727  ATCATTAGTCTAAATAGAATAAAATTACCAGCTAGAACTATACGAGGAAATTCTGAGGTG    668

Qy     991  AGGTAAATCAGTAAGGCCAGTTGTATATACCTCGTAAGCATTTATTTTTCATTAATCATT   1050
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     667  AGGTAAATCAGTAAGGCAGTTGTATATACCTCGTAAGCATTTATTTTTCATTAATCATT    608

Qy    1051  TCATTTATTCATTTGTAACACTTCTCAGTAATATAATCATTATTATTTTCATTAATCATT   1110
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     607  TCATTTATTCATTTGTAACACTTCTCAGTAATATAATCATTATTATTTTCATTAATCATT    548

Qy    1111  TTATACTTACTATTAAGGTTGTTTCCCACTCGTGGAAAAGAGACACAAGTAAAAACCTCTTGGG   1170
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     547  TTATAGCTTAGTATATAAGGTGGTTTCCCACCTCGTGGAAAAGAGACACAAGTAAAAACCTCTTGGG    488

Qy    1171  AGAAGGGAACTTGTGTAAAACCCCACAAAAACAAAAGTCTAAC-TTTTGGACCAAAATTTTTAT   1230
            ||||||||||||||||||||||||||||||||||||||||||  ||||||||||||||||||
Db     487  AGAAGGGAACTTGTGTAAAACCCCACAAAAACAAAAGTCTAACTTTTTGGACCAAAATTTTTAT    429

Qy    1231  GCCTTGTTTTGATGAATTATATTTTTTTTAAAAATCTTCATTAGGACCAACTGTGCATT   1290
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     428  GCCTTGTTTTGATGAATTATATTTTTTTTAAAAATCTTCATTAGGACCAACTGTGCATT    369

Qy    1291  AAAGAAGTTTTTTCAGGGTGTAGAGACACATTGAAGAGAGACCAAACTGCCCACGGGGGAGGTGTG   1350
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     368  AAAGAAGTTTTTTCAGGGTGTAGACACATTGAAGAGAGACCAAACTGCCCACGGGGGAGGTGTG    309

Qy    1351  GATAAACTATTCCAAAACTTGTCTTTAAATAAAAGGACACATTAGAGGCGCCAAAAAGTAAGT   1410
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     308  GATAAACTATTCCAAAACTTGTCTTTAAATAAAAGGACACATTAGAGGCGCCAAAAAGTAAGT    249

Qy    1411  TAAAGACATTTGGCAAAAACTTAAGTATATTGTGTGTACTCTGCCCTGTTTTTTTTTT   1470
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     248  TAAAGACATTTGGGCAAAAACTTAAGTATATTGTGTGTACTCTGCCCTGTTTTTTTTTT    189

Qy    1471  TTTTTACAGAATTGACAGTTTCCTACAATATCCTCTCTGTCTTTTTTTTAACAGAAAAAGGTG   1530
            |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     188  TTTTTACAGAATTGACAGTTTCCTACAATATCCTCTCTGTCTTTTTTTTAACAGAAAAAGGTG    129

Qy    1531  TGCAGGAGAAGATGGAGAGTGAGAGTTGAGAGAAGTTCCTAGACTACCTGCAAGTATTCCTTCGTGT   1590
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     128  TGCAGGAGAAGATGGAGAGTGAGAGTTCCTAGACTACCTGCAAGTATTCCTTGGTGT     69

Qy    1591  AATAAACACCCGAGTGGACACCCGGAAAGTTGAGAACAAAACCGGCTTATTGTGTAGTGGGAAGAT   1650
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      68  AATAAACACCCGAGTGGACACCCGGAAAGTTGAGAACAAAACCGGCTTATTGTGTAGTGGGAAGAT      9

Qy    1651  TTTGGGAGA   1658
            |||||||||
Db       8  TTTGGGAGA      1
```

; ORGANISM: Canis familiaris
US-10-787-382-19

Query Match   80.5%; Score 1335; DB 19; Length 1658;
Best Local Similarity   99.8%; Pred. No. 0;
Matches 1625; Conservative   0; Mismatches 0; Indels 2; Gaps 2;

```
Qy        32 AATGCTTCTCGAAATTTGAGTTTGCTAGCTCTTGGGGCGTCGCCTATGTTTCTCGCCTTTGCTGT  91
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1627 AATGCTTCTCGAAATTTGAGTTTGCTAGCTCTTGGGGCGTCGCCTATGTTTCTCGCCTTTGCTGT 1568

Qy        92 AGAAAAATCCCATGAATAGAGACTGGTGGTCGGCGAGACCTTGACACTGCTCTCCACTCATCGAAC 151
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1567 AGAAAAATCCCATGAATAGAGACTGGTGGTGCAGAGACCTTGACACTGCTCTCCACTCATCGAAC 1508

Qy       152 TTGGCTGATAGGCGATGGGGGGGTAATTTTCTTTTGATTCCTACAGTCTTTAAAATGCATGG 211
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1507 TTGGCTGATAGGCGATGGGGGGTAATTTTCTTTTGATTCCTACAGTCTTTAAAATGCATGG 1448

Qy       212 GTAATTGGTGGTGGTGGGTCGGTCGTTTTAAAGATCCATTATCAATAATGAGAGTAATCAGTGT 271
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1447 GTAATTGGTGGTGGTGGGTCAGTGTTTTTAAAGATCCATTATCAATAATGAGAGTAATCAGTGT 1388

Qy       272 TAATAATATAT-AATGGGTAACCATGTTACTCAGGAGAATTATATATTATTAAAAGTATGAAACC 330
             |||||||||||| ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1387 TAATAATATATAAAATGGGTAACCAGTTACTCAGGAGAATTATATATTATTAAAAGTATGAAACC 1328

Qy       331 TTACAAATACAACATTAAAAAATGAATGTTGTTCCTTTCTTTTCTTTTTCAGAACCTGATGATTCCTAC 390
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1327 TTACAAATACAACATTAAAAAATGAATGTTGTTCCTTTCTTTTTCTTTTTCAGAACCTGATGATTCCTAC 1268

Qy       391 TCCCTGAAAAATAAAAAGTAAGTTAAATTATGATTTGATAAAATGAATCACAGTT 450
             |||||||||||||||||||||||||||||||||||||||||||||||||| |||||
Db      1267 TCCCTGAAAAATAAAAAGTAAGTTAAATTATGATTTGATAAAATGAATCAGTT 1208

Qy       451 TCATATTTTTAAGCTATAAAGTATCAACATTGGGATGATTAATTTATTTTATTTG 510
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1207 TCATATTTTTAAGCTATAAAGTATCAGTAACATTGGGATGATTAATTTATTTTATTTG 1148

Qy       511 TTTTTTATGTGTGCGGATGTAAAATATTATGTGCTTATCATAAATAATTATGATTGGAATG 570
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1147 TTTTTTATGTGTGCGGATGTAAAATTATGTGCTTATCATAAATAATTATGATTGGAATG 1088

Qy       571 GCTCTACAATATTAAGTAGAATCATTAAGCAAGTGGATCAGGCCCTTTTTTTGATTGTGT 630
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1087 GCTCTACAATATTAAGTAGAATCATTAAGCAAGTGGATCAGGCCCTTTTTTTGATTGTGT 1028

Qy       631 CAGTTCTCCATCTCAAAGAGGCCTCGGTGTCAGGCATTCTTTCCAAAAGAAATTCCATATTGG 690
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1027 CAGTTCTCCATCTCAAAAGAGCCTCGTGTCAGGCATTCTTTCCAAAAGAATTCCATATTGG 968

Qy       691 GTCAGAGATACTTCCTAGGGCTCCATTCACCTCGTCGTTGGCTTTCCTCACCTCAACGTT 750
             |||||||||||||||||||||||||||||||||||||||||||||||| ||||||||||||
Db       967 GTCAGAGATACTTCCTAGGGCTCCATTCACCTCGTCGTTGGCTTTCCTCACCTCAACGTT 908

Qy       751 TTTTCTGAAAGTAACTAGCAACTTGGGGTTATATTTTTAGAATTATGGTACTAGACACATGAA 810
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       907 TTTTCTGAAAGTAACTAGCAACTTGGGGTTATATTTTTAGAATTATGGTACTAGACACATGAA 848

Qy       811 AATATACAGTGAAGTCCTATATTAATAAGTAGTCACTTCCACATATTAAATGATTTTTAACTC 870
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       847 AATATACAGTGAAGTCCTATATTAATAAGTCACTTCCACATATTTAAATGATTTTTAACTC 788

Qy       871 TAAGGAATCATATACATCTGGAGTATGTGTCATGGTCATATCTCCACATATTTAAAAAGTGTGAT 930
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       787 TAAGGAATCATATACATCTGGAGTATGTGTCATGGTCATATCTCCACATATTTAAAAAGTGTGAT 728

Qy       931 ATCATTAGTTCTAAAATAGAAAAATTACCAGCTAGAACTATACGAGGAAAATTCTGAGGTG 990
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       727 ATCATTAGTTCTAAAATAGAAAAATTACCAGCTAGAACTATACGAGGAAAATTCTGAGGTG 668

Qy       991 AGGTAAATCAGTAAGGCAGTTGTATTATACCTGTAAGCAGTTATTTATTCATTAATCATT 1050
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       667 AGGTAAATCAGTAAGGCAGTTGTATTATACCTGTAAGCAGTTATTTATTCATTAATCATT 608

Qy      1051 TCATTTATATCATTGTACACTTCTCCAGTAATTAATATATAAAACATCATTACTTATGGTAA 1110
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       607 TCATTTATATCATTTGTACACTTCCAGTAATTAATATATAAACATCATTACTTATGGTAA 548

Qy      1111 TTATAGCTTAGTATAAGGTGGTTTCCCACTCCGGAAAAGACACAAGTAAAAACCTCTTGGG 1170
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       547 TTATAGCTTAGTATAAGGTGGTTTCCCACTCCGGAAAAGACACAAGTAAAAAACCTCTTGGG 488

Qy      1171 AGAAGGGAACTTGTGTGTAAAACCCCACAAAAACAAAAGTCTAACTTTTTGACCAAATTTTTAT 1230
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||| |||||||
Db       487 AGAAGGGAACTTGTGTGTAAAACCCCACAAAAACAAAAGTCTAAC-TTTTGACCAAATTTTTAT 429

Qy      1231 GCCTTGTTTTGATGAATTATATTTTTTAAAAATCTTCCTCATTAGCACCAACTGTGCATT 1290
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       428 GCCTTGTTTTGATGAATTATATTTTTTAAAAATCTTCCTCATTAGCACCAACTGTGCATT 369

Qy      1291 AAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCTCCCACGCTGTGCCCACGGGGTCGTG 1350
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       368 AAAGAAGTTTTTCAGGGTATAGACACATTGAAGAACCCCACGGGGAGGGCTGTG 309

Qy      1351 GATAAACTATTCCAAAAACTTGTCTTTTAATAAAAAGAACACATAGAGGGCCAAAAGGAAGT 1410
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       308 GATAAACTATTCCAAAAACTTGTCTTTTAATAAAAAGAACACATAGAGCCCAAAAAGTAAGT 249

Qy      1411 TAAAGACATTTGGCAAAAACTTAAGTATATATATTGTCTGACTCTGCCCTGTTTTTTTTTTT 1470
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       248 TAAAGACATTTGGCAAAAACTTAAGTATATATATTGTCTGACTCTGCCCTGTTTTTTTTTTT 189

Qy      1471 TTTTTACAAGAATTGACAGTTTCCTACTACAATATCTCCTCTGTTCTTTTTTAACAGAAAAAGGTG 1530
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       188 TTTTTACAAGAATTGACAGTTTCCTACAATATCTCCTCTGTTCTTTTTAACAGAAAAAGGTG 129

Qy      1531 TGCAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAGTATTTCTTGGTGT 1590
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       128 TGCAGAGAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGT 69

Qy      1591 AATAAACACCGGAGTGGACACCGGGAAAGTTGAGAACAAACCGGCCTTATTGTAGTGGAGAT 1650
             ||||||||||||||||||||||||||||||||||||||||||| |||||||||||||||||
Db        68 AATAAACACCGGAGTGGACACCGGGAAAGTTGAGAACAAACCGGCTTATTGTAGTGGAAGAT 9

Qy      1651 TTTTGGAGA 1658
             |||||||||
Db         8 TTTTGGAGA 1
```

Query Match   24.5%; Score 406; DB 9; Length 671;

Left column

Best Local Similarity   100.0%;   Pred. No. 1.6e-184;
Matches 406;   Conservative 0;   Mismatches 0;   Indels 0;   Gaps 0;

```
Qy  241 GATCCAATTATCAATAATGAAGTAATGAGTGTTAATAATATATATATATAATGGGTAACCAT 300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 GATCCAATTATCAATAATGAAGTAATGAGTGTTAATAATATATATATATAATGGGTAACCAT 300

Qy  301 TCAGAAGAATTATATTATTAAAAGTTATGAAACCTTACAATACACATTAAAAAATGAATGTTGTTTC 360
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301 TCAGAAGAATTATATTATTAAAAGTTATGAAACCTTACAATACACATTAAAAAATGAATGTTGTTTC 360

Qy  361 CTTTCTTTTTCAGAACCTGATGATTCCTACTCCTCCTGAAAATAAAAAT 406
        |||||||||||||||||||||||||||||||||||||||
Db  361 CTTTCTTTTTCAGAACCTGATGATTCCTACTCCTCCTGAAAATAAAAAT 406
```

RESULT 6
US-10-787-382-21
; Sequence 21, Application US/10787382
; Publication No. US20040191868A1
; GENERAL INFORMATION:
;   APPLICANT: Yang, Shumin
;   APPLICANT: McCall, Catherine A.
;   APPLICANT: Weber, Eric R.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C1-C1
;   CURRENT APPLICATION NUMBER: US/10/787,382
;   CURRENT FILING DATE: 2004-02-24
;   PRIOR APPLICATION NUMBER: US/09/755,633
;   PRIOR FILING DATE: 2001-01-05
;   PRIOR APPLICATION NUMBER: 09/322,409
;   PRIOR FILING DATE: 1999-05-28
;   PRIOR APPLICATION NUMBER: 60/087,306
;   PRIOR FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 21
;   SOFTWARE: PatentIn Ver. 2.1
;
;   SEQ ID NO 21
;   LENGTH: 671
;   TYPE: DNA
;   ORGANISM: Canis familiaris

Query Match   24.5%;   Score 406;   DB 19;   Length 671;
Best Local Similarity   100.0%;   Pred. No. 1.6e-184;
Matches 406;   Conservative 0;   Mismatches 0;   Indels 0;   Gaps 0;

```
Qy    1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAAATTTGAGTTTGCTAGCTC 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAAATTTGAGTTTGCTAGCTC 60

Qy   61 TTGGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAG 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 TTGGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAG 120

Qy  121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGGGTAATTTCT 180
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGGGTAATTTCT 180
```

Right column

```
Db  121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGGGTAATTTCT 180

Qy  181 TTTTGATTCCTACAGTCTTTAAAAATGCATGGGGTAATTGGTGGTGGTGGCTAGTTGTTTAAA 240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 TTTTGATTCCTACAGTCTTTAAAAATGCATGGGGTAATTGGTGGTGGTGGCTAGTTGTTTAAA 240
```

RESULT 7
US-09-755-633-4
; Sequence 4, Application US/09755633
; Patent No. US20020127200A1
; GENERAL INFORMATION:
;   APPLICANT: Yang, Shumin
;   APPLICANT: McCall, Catherine A.
;   APPLICANT: Weber, Eric R.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C1-C1
;   CURRENT APPLICATION NUMBER: US/09/755,633
;   CURRENT FILING DATE: 2001-01-05
;   PRIOR APPLICATION NUMBER: 09/322,409
;   PRIOR FILING DATE: 1999-05-28
;   PRIOR APPLICATION NUMBER: 60/087,306
;   PRIOR FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 21
;   SOFTWARE: PatentIn Ver. 2.1
;
;   SEQ ID NO 4
;   LENGTH: 610
;   TYPE: DNA
;   ORGANISM: Canis familiaris
;   FEATURE:
;   NAME/KEY: CDS
;   LOCATION: (29)..(430)

US-09-755-633-4

Query Match   10.3%;   Score 170;   DB 9;   Length 610;
Best Local Similarity   100.0%;   Pred. No. 6.9e-71;
Matches 170;   Conservative 0;   Mismatches 0;   Indels 0;   Gaps 0;

```
Qy    1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAAATTTGAGTTTGCTAGCTC 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAAATTTGAGTTTGCTAGCTC 62

Qy   61 TTGGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAG 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   63 TTGGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAG 122

Qy  121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGG 170
        |||||||||||||||||||||||||||||||||||||||||||||||||||
Db  123 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGG 172
```

RESULT 8
US-09-755-633-6/c
; Sequence 6, Application US/09755633
; Patent No. US20020127200A1
; GENERAL INFORMATION:
;   APPLICANT: Yang, Shumin
;   APPLICANT: McCall, Catherine A.
;   APPLICANT: Weber, Eric R.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC

```
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/755,633
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: PatentIn Ver. 2.1
;
; SEQ ID NO 6
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris

US-09-755-633-6

Query Match      10.3%;  Score 170;  DB 9;  Length 610;
Best Local Similarity   100.0%;  Pred. No. 6.9e-71;
Matches  170;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy      1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    608 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 549

Qy     61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGGCAG 120
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    548 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGGCAG 489

Qy    121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 170
            ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    488 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 439
```

```
RESULT 9
US-10-218-654-80
; Sequence 80, Application US/10218654
; Publication No. US20030099609A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/10/218,654
; CURRENT FILING DATE: 2002-08-13
; PRIOR APPLICATION NUMBER: US/09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 80
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (29)..(430)

US-10-218-654-80

Query Match      10.3%;  Score 170;  DB 14;  Length 610;
Best Local Similarity   100.0%;  Pred. No. 6.9e-71;
Matches  170;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy      1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      3 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 62

Qy     61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGGCAG 120
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     63 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGGCAG 122
```

```
Qy    121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 170
            |||||||||||||||||||||||||||||||||||||||||||||||||||
Db    123 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 172
```

```
RESULT 10
US-10-218-654-82/c
; Sequence 82, Application US/10218654
; Publication No. US20030099609A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/10/218,654
; CURRENT FILING DATE: 2002-08-13
; PRIOR APPLICATION NUMBER: US/09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 82
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris

US-10-218-654-82

Query Match      10.3%;  Score 170;  DB 14;  Length 610;
Best Local Similarity   100.0%;  Pred. No. 6.9e-71;
Matches  170;  Conservative  0;  Mismatches  0;  Indels  0;  Gaps  0;

Qy      1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    608 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 549

Qy     61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGGCAG 120
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    548 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGGCAG 489

Qy    121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 170
            |||||||||||||||||||||||||||||||||||||||||||||||||||
Db    488 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 439
```

```
RESULT 11
US-10-262-439-80
; Sequence 80, Application US/10262439
; Publication No. US20030143196A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/10/262,439
; CURRENT FILING DATE: 2002-09-30
; PRIOR APPLICATION NUMBER: US/09/451,527
; PRIOR FILING DATE: 1999-12-01
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 80
; LENGTH: 610
```

; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (29)..(430)
US-10-262-439-80

Query Match   10.3%; Score 170; DB 15; Length 610;
Best Local Similarity   100.0%; Pred. No. 6.9e-71;
Matches 170; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 AGGCAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
       |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3 AGGCAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 62

Qy 61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAAATCCCATGAATAGAACTGGTGGCAG 120
       |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 63 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAAATCCCATGAATAGAACTGGTGGCAG 122

Qy 121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 170
       ||||||||||||||||||||||||||||||||||||||||||||||||||
Db 123 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 172

RESULT 12
US-10-262-439-82/c
; Sequence 82, Application US/10262439
; Publication No. US20030143196A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: 2002-09-30
; CURRENT FILING DATE:
; PRIOR APPLICATION NUMBER: US/10/262,439
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-12-01
; PRIOR APPLICATION NUMBER: US/09/451,527
; PRIOR FILING DATE:
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 82
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-262-439-82

RESULT 13
US-10-787-382-4
; Sequence 4, Application US/10787382
; Publication No. US20040191868A1

Query Match   10.3%; Score 170; DB 15; Length 610;
Best Local Similarity   100.0%; Pred. No. 6.9e-71;
Matches 170; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 AGGCAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
       |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 608 AGGCAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 549

Qy 61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAAATCCCATGAATAGAACTGGTGGCAG 120
       |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 548 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAAATCCCATGAATAGAACTGGTGGCAG 489

Qy 121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 170
       ||||||||||||||||||||||||||||||||||||||||||||||||||
Db 488 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 439

; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/10/787,382
; CURRENT FILING DATE: 2004-02-24
; PRIOR APPLICATION NUMBER: US/09/755,633
; PRIOR FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: Patentin Ver. 2.1
; SEQ ID NO 4
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (29)..(430)
US-10-787-382-4

Query Match   10.3%; Score 170; DB 19; Length 610;
Best Local Similarity   100.0%; Pred. No. 6.9e-71;
Matches 170; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy   1 AGGCAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
       |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3 AGGCAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 62

Qy 61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAAATCCCATGAATAGAACTGGTGGCAG 120
       |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 63 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAAATCCCATGAATAGAACTGGTGGCAG 122

Qy 121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 170
       ||||||||||||||||||||||||||||||||||||||||||||||||||
Db 123 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 172

RESULT 14
US-10-787-382-6/c
; Sequence 6, Application US/10787382
; Publication No. US20040191868A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/10/787,382
; CURRENT FILING DATE: 2004-02-24
; PRIOR APPLICATION NUMBER: US/09/755,633
; PRIOR FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: Patentin Ver. 2.1
; SEQ ID NO 6
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-787-382-6

Query Match   10.3%; Score 170; DB 19; Length 610;
Best Local Similarity   100.0%; Pred. No. 6.9e-71;
Matches 170; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy      1 AGGCAAACACTGAACATTTCAGAGAGCTCTATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    608 AGGCAAACACTGAACATTTCAGAGAGCTCTATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTC 549

Qy     61 TTGGGGGCTGCCTATGTTTCTCGCCTTTGCTGTGAGAAAATCCCATGAATAGACTGGTGGGCAG 120
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    548 TTGGGGGCTGCCTATGTTTCTCGCCTTTGCTGTGAGAAAATCCCATGAATAGACTGGTGGGCAG 489

Qy    121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 170
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    488 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGG 439
```

RESULT 15
US-09-755-633-7
; Sequence 7, Application US/09755633
; Patent No. US2002012720A1
; GENERAL INFORMATION:
;   APPLICANT: Yang, Shumin
;   APPLICANT: McCall, Catherine A.
;   APPLICANT: Weber, Eric R.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C1-C1
;   CURRENT APPLICATION NUMBER: US/09/755,633
;   CURRENT FILING DATE: 2001-01-05
;   PRIOR APPLICATION NUMBER: 09/322,409
;   PRIOR FILING DATE: 1999-05-28
;   PRIOR APPLICATION NUMBER: 60/087,306
;   PRIOR FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 21
;   SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 7
;   LENGTH: 402
;   TYPE: DNA
;   ORGANISM: Canis familiaris
US-09-755-633-7

  Query Match   8.7%; Score 144; DB 9; Length 402;
  Best Local Similarity   100.0%; Pred. No. 2.2e-58;
  Matches 144; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

```
Qy     27 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTCGCCTTT 86
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTCGCCTTT 60

Qy     87 GCTGTGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 146
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 GCTGTGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy    147 CGAACTTGGCTGATAGGCGGATGGG 170
          |||||||||||||||||||||||||
Db    121 CGAACTTGGCTGATAGGCGGATGGG 144
```

Search completed: August 8, 2005, 14:25:05
Job time : 1365.34 secs

GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

OM nucleic - nucleic search, using sw model

Run on: August   8, 2005, 13:43:44 ; Search time 7038.94 Seconds
                                   (without alignments)
                                   8965.920 Million cell updates/sec

Title: US-10-787-382-18
Perfect score: 1658
Sequence: 1 aggcaaacactgaacattc..........gtagtggaagagatttggaga 1658

Scoring table: OLIGO_NUC
               Gapop 60.0 , Gapext 60.0
Searched: 34239544 seqs, 19032134700 residues
Word size :   0

Total number of hits satisfying chosen parameters: 68479088

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database :   EST:*
          1:   gb_est1:*
          2:   gb_est2:*
          3:   gb_htc:*
          4:   gb_est3:*
          5:   gb_est4:*
          6:   gb_est5:*
          7:   gb_est6:*
          8:   gb_gss1:*
          9:   gb_gss2:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	389	23.5	622	9	CE331159	CE331159 tigr-gss-
2	29	1.7	528	5	BX493336	BX493336 DKFZp781I
3	28	1.7	556	5	BX467653	BX467653
4	28	1.7	684	6	CB076419	CB076419 hf42h04.g
5	28	1.7	915	2	BE897924	BE897924 60140040
6	27	1.6	522	1	AL370520	AL370520 MtBA38C10
7	27	1.6	534	5	AW102086	AW102086 sd82h01.y
8	27	1.6	559	5	BU571592	BU571592 94614281l
9	27	1.6	614	6	CA429123	CA429123 UI-H-FH1-
10	27	1.6	659	6	CV225996	CV225996 WS0162.B2
11	27	1.6	687	6	CB824053	CB824053 EST 5277
12	27	1.6	697	7	CR564875	CR564875
13	27	1.6	720	6	CD038829	CD038829 UTPPIO12
14	27	1.6	818	9	CNS04725	AL278618 Tetraodon
15	27	1.6	856	3	CR718261	CR718261 Tetraodon
16	27	1.6	934	3	CR709900	CR709900 Tetraodon
17	27	1.6	963	3	CR713358	CR713358 Tetraodon
18	27	1.6	1027	3	CR711036	CR711036 Tetraodon
19	26	1.6	114	6	CB972911	CB972911 CAB30001
20	26	1.6	114	6	CD407086	CD407086 Gm_ck3208
21	26	1.6	120	2	BE155390	BE155390 PMI-HT035
22	26	1.6	140	5	BQ022057	BQ022057 UI-1-BB1p
23	26	1.6	145	4	BM710374	BM710374 UI-E-CQ1-
24	26	1.6	154	7	CO509273	CO509273 tah31a08.
25	26	1.6	202	2	AW524394	AW524394 UI-R-B00-
26	26	1.6	206	1	AA475329	AA475329 vh14b02.r
27	26	1.6	266	7	CK701268	CK701268 USDA-FP 4
28	26	1.6	271	4	BG651868	BG651868 sad62b01.
29	26	1.6	273	5	BQ156344	BQ156344 NF091H02I
30	26	1.6	287	4	BG157100	BG157100 sab34d06.
31	26	1.6	299	1	AL836569	AL836569 AL836569
32	26	1.6	299	1	AL836604	AL836604 AL836604
33	26	1.6	308	7	CO375395	CO375395 tah27f09.
34	26	1.6	321	7	CO371439	CO371439 tah12a05.
35	26	1.6	322	4	BT708412	BT708412 ft47d01.y
36	26	1.6	352	2	BE474681	BE474681 sp67c06.y
37	26	1.6	363	5	BT700148	BT700148 UI-M-DJ0-
38	26	1.6	371	4	BI299610	BI299610 UI-R-CV2-
39	26	1.6	390	5	BU759812	BU759812 UI-R-FS1-
40	26	1.6	406	7	CV501477	CV501477 65988.1 M
41	26	1.6	411	1	A12743359	A12743359 g144c03.x
42	26	1.6	415	4	BI301007	BI301007 UI-R-DK0-
43	26	1.6	418	6	CD424543	CD424543 SA1_6_C01
44	26	1.6	419	7	CN782511	CN782511 ai_K003.9
45	26	1.6	426	2	AW124901	AW124901 UI-M-BH2.

ALIGNMENTS

RESULT 1
LOCUS   CE331159
DEFINITION   CE331159   622 bp   DNA   linear   GSS 26-SEP-2003
             tigr-gss-dog-1700033986568 Dog Library Canis familiaris genomic,
             genomic survey sequence.
ACCESSION   CE331159
VERSION   CE331159.1   GI:36147469
KEYWORDS   GSS.
SOURCE   Canis familiaris (dog)
ORGANISM   Canis familiaris
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1 (bases 1 to 622)
AUTHORS   Kirkness,E.F., Bafna,V., Halpern,A.L., Levy,S., Remington,K.,
             Rusch,D.B., Delcher,A.L., Pop,M., Wang,W., Fraser,C.M. and
             Venter,J.C.
TITLE   The dog genome: survey sequencing and comparative analysis
JOURNAL   Science 301 (5641), 1898-1903 (2003)
MEDLINE   22875432
PUBMED   14512627
COMMENT   Contact: Kirkness EF
             The Institute for Genomic Research
             Department of Eukaryotic Genomics, TIGR, 9712 Medical Center Drive,
             Rockville, MD 20850, USA
             Tel: 301-838-0200
             Fax: 301-838-0208
             Email: ekirkness@tigr.org
             Class: shotgun.
FEATURES   Location/Qualifiers
      source   1..622
                       /organism="Canis familiaris"
                       /mol_type="genomic DNA"
                       /strain="standard Poodle"
                       /db_xref="taxon:9615"
                       /clone_lib="Dog Library"
                       /note="Site 1: BstXI; Libraries were prepared from
                       peripheral blood"
ORIGIN

Query Match   23.5%;   Score 389;   DB 9;   Length 622;
Best Local Similarity   100.0%;
Matches 389;   Conservative   0;   Mismatches   0;   Indels   0;   Gaps   0;

Qy   1270 ATTTAGCACCAACTGTGCCATTAAAGAGAGTTTTTTCAGGGTATAGACACACATTGAGAACCAA 1329
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   36 ATTTAGCACCAACTGTGCCATTAAAGAGAGTTTTTTCAGGGTATAGACACATTGAGAACCAA 95

```
Qy   1330 ACTGCCCACCGGGGAGGCTGTGGATAAACTATTCCAAAACTATTGTCTTAATAAAAGAACAC 1389
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     96 ACTGCCCACCGGGGAGGCTGTGGATAAACTATTCCAAAACTATTGTCTTAATAAAAGAACAC 155

Qy   1390 ATAGAGCCGCCAGCAAAAAGTAAGTTAAAGACATATTGGTCGCAAAAAGACTTAGTAGTATTTGTCTGAC 1449
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    156 ATAGAGCCGCCAGCAAAAAGTAAGTTAAAGACATATTGGTCGCAAAAAGACTTAGTAGTATTTGTCTGAC 215

Qy   1450 TCTGCCTGTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTACAGAACATTTGACACAGTTTCCTACAATATATCTCCTCT 1509
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    216 TCTGCCTGTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTACAGAACATTTGACACAGTTTCCTACAATATATCTCCTCT 275

Qy   1510 GTTCTTTAACAGAAAAAGGTGTGCAGGAGAGTGGACAAAGTTCCTAGACTA 1569
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db    276 GTTCTTTAACAGAAAAAGGTGTGCAGGAGAGTGGACAAAGTTCCTAGACTA 335

Qy   1570 CCTGCAAGTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCGAGAAAAGTTGAGACAAAC 1629
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    336 CCTGCAAGTATTTCTTGGTGTGTAATAAAACACCGAGTGGACACCGAGAAAAGTTGAGACAAAC 395

Qy   1630 CGGGCTTATTGTGTAGTGGGAAGATTTTGGAGA 1658
          |||||||||||||||||||||||||||||||||
Db    396 CGGGCTTATTGTGTAGTGGGAAGATTTTGGAGA 424
```

RESULT 2

```
LOCUS       BX493336               528 bp    mRNA    linear   EST 04-SEP-2003
DEFINITION  DKFZp781I243_s1 781 (synonym: hlcc4) Homo sapiens cDNA clone
            DKFZp781I243_3', mRNA sequence.
ACCESSION   BX493336
VERSION     BX493336.1  GI:32005734
KEYWORDS    EST.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 528)
  AUTHORS   Bloecker,H., Boecker,M., Mewes,H.W., Weil,B., Amid,C., Osanger,A.,
            Fobo,G., Han,M. and Wiemann,S.
  TITLE     EST (Bloecker,H., Boecker,M., Mewes,H.W., Weil,B., Amid,C., et al.)
  JOURNAL   Unpublished (2003)
COMMENT     Contact: MIPS
            MIPS
            Ingolstaedter Landstr.1, D-85764 Neuherberg, Germany
            This is the 3' sequence of the clone insert
            Clone from S. Wiemann, Molecular Genome Analysis, German Cancer
            Research Center (DKFZ); Email s.wiemann@dkfz-heidelberg.de;
            sequenced by GBF (National Research Centre for Biotechnology Ltd.,
            Braunschweig/Germany) within the cDNA sequencing consortium of the
            German Genome Project
            This clone (DKFZp781I243) is available at the RZPD in Berlin.
            rl sequence also available.
            Please contact the RZPD: Ressourcenzentrum, Heubnerweg 6, 14059
            Berlin-Charlottenburg, GERMANY; Email: clone@rzpd.de.
FEATURES             Location/Qualifiers
     source          1..528
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="DKFZp781I243"
                     /dev_stage="adult"
                     /lab_host="DH10B"
                     /clone_lib="781 (synonym: hlcc4)"
                     /note="Vector: pSport1_Sfi; Site_1: SfiIA; Site_2: SfiIB;
                     cDNA-collection"
```

```
Db      1 TGTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTACAAGAATT 29
          |||||||||||||||||||||||||||||||||||||||||||
```

RESULT 3

```
LOCUS       BX467653               556 bp    mRNA    linear   EST 12-JUN-2003
DEFINITION  BX467653 NAP1 Anopheles gambiae cDNA clone NAP1-P126-D-10-5, mRNA
            sequence.
ACCESSION   BX467653
VERSION     BX467653.1  GI:31658594
KEYWORDS    EST.
SOURCE      Anopheles gambiae (African malaria mosquito)
  ORGANISM  Anopheles gambiae
            Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
            Neoptera; Endopterygota; Diptera; Nematocera; Culicoidea;
            Anopheles.
REFERENCE   1  (bases 1 to 556)
  AUTHORS   Christophides,G.K., Blass,K., Zdobnov,E.M., Carmouche,R., Benes,V.
            and Kafatos,F.C.
  TITLE     Anopheles gambiae EST, European Molecular Biology Laboratory
  JOURNAL   Unpublished (2002)
COMMENT     Contact: Christophides GK
            Kafatos Laboratory
            European Molecular Biology Laboratory
            Meyerhofstrasse 1, 69117 Heidelberg, Germany
            Tel: +49 6221 387-440
            Fax: +49 6221 387-306
            Email: christoph@embl-heidelberg.de
            Contact: Christophides G.K.
            European Molecular Biology Laboratory
            Meyerhofstr. 1, 69117 Heidelberg, Germany.
            Tel: +49 6221 387-440
            Fax: +49 6221 387-306
            Email: christop@embl-heidelberg.de
            Plate: P126 row: D column: 10.
FEATURES             Location/Qualifiers
     source          1..556
                     /organism="Anopheles gambiae"
                     /mol_type="mRNA"
                     /db_xref="taxon:7165"
                     /clone="NAP1-P126-D-10-5"
                     /lab_host="E. coli DH10B"
                     /clone_lib="NAP1"
                     /note="Vector: pT7T3D-Pac (Pharmacia); Site_1: NotI;
                     Site_2: EcoRI; ESTs sequenced from the T7 priming site
                     that reads from the 5' end of cDNA. The NAP1 is a
                     directionally cloned and normalized, oligo-T primed cDNA
                     library constructed from a mixture of Anopheles gambiae
                     developmental stages according to: Bonaldo, Lennon &
                     Soares (1996): Normalization and Subtraction: Two
                     Approaches To Facilitate Gene Discovery, Genome Research
                     6, 791-806."
ORIGIN
```

```
Qy   1452 TGCCTGTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTACA 1479
          |||||||||||||||||||||||||||||||||||||||
Db    552 TGCCTGTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTACA 525
```

RESULT 4

```
LOCUS       CB076419               684 bp    mRNA    linear   EST 24-JAN-2003
DEFINITION  CB076419 hf42h04.g1 Hedyotis terminalis flower - Stage 2 (NYBG) Hedyotis
            terminalis cDNA clone hf42h04, mRNA sequence.
ACCESSION   CB076419
VERSION     CB076419.1  GI:27889856
KEYWORDS    EST.
SOURCE      Hedyotis terminalis
  ORGANISM  Hedyotis terminalis
```

Qy
Query Match 1.7%; Score 29; DB 5; Length 528;
Best Local Similarity 100.0%; Pred. No. 0.022;
Matches 29; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

1456 TGTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTACAAGAATT 1484

ORGANISM   Hedyotis terminalis
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
            asterids; lamiids; Gentianales; Rubiaceae; Rubioideae;
            Spermacoceae; Hedyotis.
REFERENCE   1 (bases 1 to 684)
  AUTHORS   Levesque,M.P., Twigg,R.W., Motley,T., Katari,M.S., Dedhia,N.N.,
            O'Shaughnessy,A.L., Balija,V., Martienssen,R.A., McCombie,R.W.,
            Benfey,P. and Stevenson,D.
  TITLE   Expressed tag sequences from Hedyotis terminalis flower - Stage 2
  JOURNAL   (NYBG)
            Unpublished (2003)
  COMMENT   Contact: W. Richard McCombie
            Lita Annenberg Hazen Genome Sequencing Center
            Cold Spring Harbor Laboratory
            PO Box 100, Cold Spring Harbor, NY 11724, USA
            Tel: 516 367 8884
            Fax: 516 367 8874
            Email: mccombie@cshl.org
            Plate: hf42 row: h column: 04
            Seq primer: -21M13Univrev
            High quality sequence stop: 684.

FEATURES   Location/Qualifiers
     source   1..684
                     /organism="Hedyotis terminalis"
                     /mol_type="mRNA"
                     /db_xref="taxon:219667"
                     /clone="hf42h04"
                     /dev_stage="pre-anthesis; Stage 2"
                     /clone_lib="Hedyotis terminalis flower - Stage 2 (NYBG)"
                     /note="Organ: flower; Vector: pBK-CMV; Site 1: XhoI;
                     Site_2: Eco RI; Date: Completed 12/18/01. Submitted to
                     CSHL 12/21/01 Library: Stratagene ZAP Express cDNA
                     Synthesis Kit. The library was size-fractionated to enrich
                     for large inserts. Sample: collected on the island of
                     Hawaii, Hawaii; NYBG herbarium voucher TM2562"

ORIGIN

Query Match   1.7%; Score 28; DB 6; Length 684;
Best Local Similarity   100.0%; Pred. No. 0.068;
Matches 28; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1458 TTTTTTTTTTTTTTTTTTTTTTTTACAAGAATTG 1485
          ||||||||||||||||||||||||||||||||||
Db   620 TTTTTTTTTTTTTTTTTTTTTTTTACAAGAATTG 593

RESULT 5
BE897924
LOCUS   BE897924   915 bp   mRNA   linear   EST 20-OCT-2000
DEFINITION 601440409F1 NIH_MGC_72 Homo sapiens cDNA clone IMAGE:3925155 5',
            mRNA sequence.
ACCESSION   BE897924
VERSION   BE897924.1 GI:10363875
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
  ORGANISM Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 915)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
  COMMENT   Contact: Robert Strausberg, Ph.D.
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: ATCC/DCTD/DTP
            Tissue Preparation: Life Technologies, Inc.
            cDNA Library Preparation: The I.M.A.G.E. Consortium (LLNL)
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Incyte Genomics, Inc.
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: LLAM9764 row: b column: 04

            High quality sequence stop: 418.

FEATURES   Location/Qualifiers
     source   1..915
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:3925155"
                     /tissue_type="melanotic melanoma"
                     /clone_lib="NIH_MGC_72"
                     /lab_host="DH10B (phage-resistant)"
                     /note="Organ: skin; Vector: pCMV-SPORT6; Site_1: NotI;
                     Site_2: SalI; Cloned unidirectionally. Primer: Oligo dT.
                     Average insert size 2 kb. Library constructed by Life
                     Technologies."

ORIGIN

Query Match   1.7%; Score 28; DB 2; Length 915;
Best Local Similarity   100.0%; Pred. No. 0.068;
Matches 28; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1458 TTTTTTTTTTTTTTTTTTTTTTTTACAAGAATTG 1485
          ||||||||||||||||||||||||||||||||||
Db   21 TTTTTTTTTTTTTTTTTTTTTTTTACAAGAATTG 48

RESULT 6
AL370520/c
LOCUS   AL370520   522 bp   mRNA   linear   EST 03-AUG-2000
DEFINITION MtBA38C10R1 MtBA Medicago truncatula cDNA clone MtBA38C10 T7, mRNA
            sequence.
ACCESSION   AL370520
VERSION   AL370520.1 GI:9670273
KEYWORDS   EST.
SOURCE   Medicago truncatula (barrel medic)
  ORGANISM Medicago truncatula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
            rosids; eurosids I; Fabales; Fabaceae; Papilionoideae; Trifolieae;
            Medicago.
REFERENCE   1 (bases 1 to 522)
  AUTHORS   Journet,E.P., Crespeau,H., van-Tuinen,D., Gouzy,J., Jaillon,O.,
            Niebel,A., Carreau,V., Chatagnier,O., Kahn,D.,
            Gianinazzi-Pearson,V. and Gamas,P.
  TITLE   Medicago truncatula ESTs from nitrogen-starved roots
  JOURNAL   Unpublished (2000)
  COMMENT   Contact: Genoscope
            Genoscope - Centre National de Sequencage
            2 rue Gaston Cremieux, CP 5706 - 91057 EVRY cedex - FRANCE
            Email: segref@genoscope.cns.fr, Web : www.genoscope.cns.fr
            Contact : Pascal Gamas and Etienne-Pascal Journet, Laboratoire de
            Biologie Moleculaire des Relations Plantes-Microorganismes,
            CNRS-INRA, BP 27 31326 Castanet-Tolosan Cedex, France (Email :
            Mt-est@toulouse.inra.fr Website :
            http://sequence.toulouse.inra.fr/Mtruncatula.html).

FEATURES   Location/Qualifiers
     source   1..522
                     /organism="Medicago truncatula"
                     /mol_type="mRNA"
                     /cultivar="Jemalong"
                     /db_xref="taxon:3880"
                     /clone="MtBA38C10"
                     /clone_lib="MtBA"
                     /dev_stage="harvested after 3 days of N-starvation"
                     /tissue_type="root tips"
                     /clone="MtBA38C10"
                     /note="Vector: pBluescript pSK; Site_1: EcoRI; Site_2:
                     XhoI; Plants were grown in an aeroponic chamber for 14
                     days on nitrogen-rich medium followed by 3 days on N-free
                     medium. RNA was extracted from root tips (1-3 cm). cDNA
                     was prepared from polyA+ enriched RNA. The cDNA was
                     directionally ligated into Uni-zapXR vector from
                     Stratagene and packaged using Gigapack Gold packaging
                     extracts. Plasmids containing cDNA inserts were
                     mass-excised from phage stocks using Exassit helper phage

RESULT 7

```
Qy   1458 TTTTTTTTTTTTTTTTTTTTACAAGAATT 1484
          ||||||||||||||||||||||||||||||
Db    517 TTTTTTTTTTTTTTTTTTTTACAAGAATT 491
```

Query Match   1.6%; Score 27; DB 1; Length 522;
Best Local Similarity 100.0%;
Matches 27; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

ORIGIN

and propagated in SOLR cells. Clone ordering and
sequencing was performed by the Centre National de
Sequencage (Genoscope, Evry, France)."

LOCUS   AW102086/c
DEFINITION   sd82h01.y1 Gm-c1009 Glycine max cDNA clone GENOME SYSTEMS CLONE ID:
             Gm-c1009-938 5' similar to WP:D1007.7 CE09042 RNA-BINDING PROTEIN
             ;, mRNA sequence.
ACCESSION   AW102086
VERSION   AW102086.1 GI:6072699
KEYWORDS   EST.
SOURCE   Glycine max (soybean)
ORGANISM   Glycine max
             Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
             Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
             rosids; eurosids I; Fabales; Fabaceae; Papilionoideae; Phaseoleae;
             Glycine.
REFERENCE   1 (bases 1 to 534)
AUTHORS   Shoemaker,R., Keim,P., Vodkin,L., Erpelding,J., Coryell,V.,
             Khanna,A., Bolla,B., Marra,M., Hillier,L., Kucaba,T., Martin,J.,
             Beck,C., Wylie,T., Underwood,K., Steptoe,M., Theising,B., Allen,M.,
             Bowers,Y., Person,B., Swaller,T., Gibbons,M., Pape,D., Harvey,N.,
             Schurk,R., Ritter,E., Kohn,S., Shin,T., Jackson,Y., Cardenas,M.,
             McCann,R., Waterston,R. and Wilson,R.
TITLE   Public Soybean EST Project
JOURNAL   Unpublished (1999)
COMMENT   Contact: Shoemaker R/Public Soybean EST Project
             Public Soybean EST Project
             Washington University School of Medicine
             4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108, USA
             Tel: 314 286 1800
             Fax: 314 286 1810
             Email: est@watson.wustl.edu
             When it has been determined, an EST from the other end of this
             clone is listed in the 'Other ESTs on clone' field. This clone is
             available through: Biogenetic Services, 801 32nd Ave. Brookings, SD
             57006 USA (phone: 800 423 4163; email: info@biogeneticservices.com)
             Seq primer: -40RP from Gibco
             High Quality sequence stop: 300.
FEATURES   Location/Qualifiers
     source   1..534
                     /organism="Glycine max"
                     /mol_type="mRNA"
                     /cultivar="Williams"
                     /db_xref="taxon:3847"
                     /clone="GENOME SYSTEMS CLONE ID: Gm-c1009-938"
                     /lab_host="XL10-Gold"
                     /clone_lib="Gm-c1009"
                     /note="Vector: pBluescript II XR; Site_1: EcoRI; Site_2:
                     XhoI; The mRNA was isolated from entire roots of
                     2-month-old 'Williams' plants that were greenhouse grown
                     in 5-gallon pots. To suppress nodulation, Black Gold
                     All-Purpose potting soil was supplemented with: 0.36g/L
                     available phosphoric acid (P2O5), 20mg/L urea N, 0.36g/L
                     S, 0.49mg/L P, 2.5mg/L Cu, 0.15g/L Fe, 13.53mg/L Mn,
                     0.26mg/L Mo, 14mg/L Zn, 20mg/L Ca, and the following
                     nutrients in a slow-release form (Osmocote): 0.165g/L
                     ammonia N, 0.185g/L nitrate N, 0.35g/L available
                     phosphoric acid, and 0.35g/L soluble potash. No nodules
                     were visible on the roots at harvest. Stratagene's cDNA
                     Synthesis Kit (catalog #200401) was used to synthesize the"

RESULT 8

```
Qy   1458 TTTTTTTTTTTTTTTTTTTTACAAGAATT 1484
          ||||||||||||||||||||||||||||||
Db    184 TTTTTTTTTTTTTTTTTTTTACAAGAATT 158
```

Query Match   1.6%; Score 27; DB 2; Length 534;
Best Local Similarity 100.0%;
Matches 27; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

ORIGIN

cDNA. First-strand synthesis was performed with 5-methyl
dCTP, hence the ligated cDNA is hemimethylated.
Stratagene's first-strand synthesis's primer was used
[GAGAGAGAGAGAGAGAACTAGTGTCGAG(T)-18].
[GAGAGAGAGAGAGAGAACTAGTGTCGAG(T)-18]. After
second-strand synthesis, the cDNA ends were 'polished',
with clone Pfu DNA polymerase, ligated to EcoRI adapters,
and phosphorylated. The XhoI site within the first-strand
synthesis primer was restricted by digestion with XhoI;
all XhoI sites in the cDNA would be protected by their
hemimethylated status. The cDNA constructs were
size-fractionated with a 400bp cutoff, using a SizeSep 400
Spun column from Pharmacia. The column eluent was then
ligated into Stratagene's pBluescript II XR Predigested
vector (pBluescript II SK(+)) that had been digested with
EcoRI and XhoI, and phosphorylated). Both the white and
blue colonies appear to contain recombinant plasmids with
cDNA inserts. This library was constructed by Dr. Paul
Keim and Dr. Virginia Coryell.

LOCUS   BU571592   559 bp   mRNA   linear   EST 16-SEP-2002
DEFINITION   946142B11.x2_946 - tassel primordium prepared by Schmidt lab Zea
             mays cDNA, mRNA sequence.
ACCESSION   BU571592
VERSION   BU571592.1 GI:22935317
KEYWORDS   EST.
SOURCE   Zea mays
ORGANISM   Zea mays
             Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
             Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD
             clade; Panicoideae; Andropogoneae; Zea.
REFERENCE   1 (bases 1 to 559)
AUTHORS   Walbot,V.
TITLE   Maize ESTs from various cDNA libraries sequenced at Stanford
             University
JOURNAL   Unpublished (1999)
COMMENT   Contact: Walbot V
             Department of Biological Sciences
             Stanford University
             855 California Ave, Palo Alto, CA 94304, USA
             Tel: 650 723 2227
             Fax: 650 725 8221
             Email: walbot@stanford.edu
             Plate: 946142 row: B column: 11.
FEATURES   Location/Qualifiers
     source   1..559
                     /organism="Zea mays"
                     /mol_type="mRNA"
                     /cultivar="OH43"
                     /db_xref="taxon:4577"
                     /tissue_type="tassels"
                     /dev_stage="just after the transition from vegetative to
                     inflorescence development"
                     /clone_lib="XLOLR"
                     /lab_host="XLOLR"
                     /note="Organ: tassels; Vector: HybriZAP; Site_1: EcoRI;
                     Site_2: XhoI; George Chuck dissected immature tassels
                     between 1mm and 3mm. Sharon Stanfield prepared the cDNA
                     library in HybriZAP. Sample insert size range was 350 bp
                     to 3 Kb with a 1 Kb average."

ORIGIN

Qy   Query Match
       Best Local Similarity   1.6%;   Score 27; DB 5;   Length 559;
       Matches 27; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Db

Qy   1458 TTTTTTTTTTTTTTTTTTTTTTTACAAGAATT 1484
             ||||||||||||||||||||||||||||||||
Db   6 TTTTTTTTTTTTTTTTTTTTTTTACAAGAATT   32

RESULT 9
CA429123
LOCUS   CA429123   614 bp   mRNA   linear   EST 07-NOV-2002
DEFINITION UI-H-FH1-bfh-i-16-0-UI.s1 NCI_CGAP_FH1 Homo sapiens cDNA clone
            UI-H-FH1-bfh-i-16-0-UI 3', mRNA sequence.
ACCESSION   CA429123
VERSION   CA429123.1 GI:24791849
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
  ORGANISM Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 614)
  AUTHORS   NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
  TITLE   National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
            Tumor Gene Index
  JOURNAL   Unpublished (1997)
COMMENT   Contact: Robert Strausberg, Ph.D.
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: James Martin
            cDNA Library Preparation: Dr. M. Bento Soares, University of Iowa
            cDNA Library Arrayed by: Dr. M. Bento Soares, University of Iowa
            DNA Sequencing by: Dr. M. Bento Soares, University of Iowa
            Clone Distribution: Clone distribution information can be obtained
            from Dr. M. Bento Soares, bento-soares@uiowa.edu
            The following repetitive elements were found in this cDNA
            sequence: 1-45, >AT_rich#Low_complexity 46-166, >ALU (matched
            compliment) 500-599, >ALU
            Seq primer: M13 FORWARD
            POLYA=Yes.
FEATURES   Location/Qualifiers
     source   1..614
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="UI-H-FH1-bfh-i-16-0-UI"
                     /tissue_type="Cell Line"
                     /dev_stage="Adult"
                     /lab_host="DH10B (life Technologies)"
                     /clone_lib="NCI_CGAP_FH1"
                     /note="Organ: Chondrosarcoma; Vector: pT7T3-Pac
                     (Pharmacia) with a modified polylinker; Site 1: EcoR I;
                     Site 2: Not I; NCI_CGAP_FH1 is a normalized cDNA library
                     obtained from a cell line derived from grade I
                     chondrosarcoma tissue. The library was constructed and
                     normalized according to Bonaldo, Lennon and Soares, Genome
                     Research, 6:791-806, 1996. First strand cDNA synthesis was
                     primed with an oligo-dT primer containing a Not I site.
                     Double stranded cDNA was ligated to an EcoR I adaptor,
                     digested with Not I, and cloned directionally into
                     pT7T3-Pac vector. The oligonucleotide used to prime the
                     synthesis of first-strand cDNA contains a library tag
                     sequence that is located between the Not I site and the
                     (dT)18 tail. The sequence tag for this library is
                     AGAATCCGGC. The cell line was provided by Dr. James Martin
                     from the University of Iowa.
                     TAG_TISSUE=Human Chondrosarcoma Cell Line CS8 - Grade 1
                     Chondrosarcoma
                     TAG_LIB=UI-H-FH1
                     TAG_SEQ=AGAATCCGGC"
ORIGIN
     Query Match   1.6%;   Score 27;   DB 6;   Length 614;

Best Local Similarity   100.0%;   Pred. No. 0.21;
Matches 27; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Db

Qy   1458 TTTTTTTTTTTTTTTTTTTTTTTACAAGAATT 1484
             ||||||||||||||||||||||||||||||||
Db   1 TTTTTTTTTTTTTTTTTTTTTTTACAAGAATT   27

RESULT 10
CV225996
LOCUS   CV225996   659 bp   mRNA   linear   EST 21-SEP-2004
DEFINITION WS0162.B21_P19 PT-DX-A-7 Populus balsamifera subsp. trichocarpa
            cDNA clone WS0162_P19 3', mRNA sequence.
ACCESSION   CV225996
VERSION   CV225996.1 GI:52374925
KEYWORDS   EST.
SOURCE   Populus balsamifera subsp. trichocarpa (Populus trichocarpa)
  ORGANISM Populus balsamifera subsp. trichocarpa
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
            rosids; eurosids I; Malpighiales; Salicaceae; Populus.
REFERENCE   1 (bases 1 to 659)
  AUTHORS   Ralph,S., Cooper,D., Kolosova,N., Oddy,C., Butterfield,Y.,
            Kirkpatrick,R., Liu,J., Palmquist,D., Stott,J., Barber,S., Yang,G.,
            Babakaiff,R., Brown-John,M., Chand,S., Featherstone,R., Masson,A.,
            Mayo,M., Moran,J., Olson,T., Wong,D., Ritland,C.E., Siddiqui,A.,
            Holt,R., Jones,S., Marra,M., Ellis,B.E., Douglas,C., Ritland,K. and
            Bohlmann,J.
  TITLE   The poplar transcriptome: Analysis of expressed sequence tags from
            multiple cDNA libraries
  JOURNAL   Unpublished (2004)
COMMENT   Contact: Joerg Bohlmann
            Genome BC forest genomics program
            University of British Columbia
            UBC Biotechnology Laboratory, 6174 University Boulevard, Rm. 237,
            Vancouver, British Columbia, Canada, V6T 123
            Tel: 1-604-822-0282
            Fax: 1-604-822-6097
            Email: bohlmann@interchange.ubc.ca
            Plate: WS0162 row: P column: 19
            High quality sequence stop: 659
            POLYA=Yes.
FEATURES   Location/Qualifiers
     source   1..659
                     /organism="Populus balsamifera subsp. trichocarpa"
                     /mol_type="mRNA"
                     /cultivar="VT-125"
                     /sub_species="trichocarpa"
                     /db_xref="taxon:3694"
                     /clone="WS0162_P19"
                     /sex="Not determined"
                     /lab_host="E. coli DH10B T1 phage resistant cells"
                     /clone_lib="PT-DX-A-7"
                     /note="Vector: pBluescript II SK (+) XR; Site 1: EcoRI (5'
                     end of cDNA); Site 2: XhoI (3' end of cDNA); Outer xylem
                     from 5 year old trees harvested every two weeks between
                     April and October of 2002 at the University of British
                     Columbia south campus farm in Vancouver, British Columbia.
                     mRNA was isolated from each tissue source independently
                     and equal quantities of mRNA from each tissue were then
                     pooled. cDNA was prepared from 5 micrograms of mRNA and
                     directionally ligated into the pBluescript II SK (+) XR
                     vector using the pBluescript II XR cDNA Library
                     Construction Kit according to manufacturer's instructions
                     with modifications (Stratagene). Plasmid DNA was then
                     transformed by electroporation into DH10B cells
                     (Invitrogen) for propagation."
ORIGIN
     Query Match   1.6%;   Score 27;   DB 7;   Length 659;
     Best Local Similarity   100.0%;   Pred. No. 0.21;
     Matches 27; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

```
Qy         1458 TTTTTTTTTTTTTTTTTTTTTACAAGAATT 1484
                |||||||||||||||||||||||||||||
Db            1 TTTTTTTTTTTTTTTTTTTTTACAAGAATT   27
```

RESULT 11
CB824053

```
LOCUS       CB824053               687 bp    mRNA    linear   EST 16-MAY-2003
DEFINITION  EST 5277 Ripe Apricot Fruit Lambda Zap II Library Prunus armeniaca
            cDNA clone bh002p09 3', mRNA sequence.
ACCESSION   CB824053
VERSION     CB824053.1  GI:2995806
KEYWORDS    EST.
SOURCE      Prunus armeniaca (apricot)
  ORGANISM  Prunus armeniaca
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
            rosids; eurosids I; Rosales; Rosaceae; Amygdaloideae; Prunus.
REFERENCE   1  (bases 1 to 687)
  AUTHORS   Grimplet,J., Romieu,C., Audergon,J.M., Albagnac,G., Lambert,P.,
            Bouchet,J.P. and Terrier,N.
  TITLE     High Throughput Detection of Isogenes among 5724 3' EST from
            Apricot Fruit(Prunus armeniaca)
  JOURNAL   Unpublished (2003)
COMMENT     Contact: Audergon JM
            Unite de genetique et amelioration des fruits et legumes
            Institut National de la Recherche Agronomique
            Domaine Saint-Maurice BP 94 84143 Montfavet cedex
            Tel: 00-33-(0)4-32-72-26-68
            Fax: 00-33-(0)4-32-72-26-62
            Email: audergon@avignon.inra.fr
            Seq primer: T7.
FEATURES             Location/Qualifiers
     source          1..687
                     /organism="Prunus armeniaca"
                     /mol_type="mRNA"
                     /cultivar="Bergeron"
                     /dev_stage="Ripe stage"
                     /db_xref="taxon:36596"
                     /clone="bh002p09"
                     /clone_lib="Ripe Apricot Fruit Lambda Zap II Library"
                     /note="Organ: Fruit; Vector: Lambda Zap II; Site_1: Eco
                     RI; Site_2: XhoI; Oriented library, construction described
                     in Molecular cloning and expression of a cDNA encoding
                     1-aminocyclopropane-1-carboxylate (ACC) oxidase from
                     apricot fruit (Prunus armeniaca cv. Bergeron) by
                     Mbeguie-Mbeguie D, Chahine H, Gomez RM, Gouble B, Audergon
                     JM, Souty M, Albagnac G, Fils-Lycaon B in Physiol Plant
                     105:294-303 1999"
ORIGIN
```

RESULT 12
CR564875

```
Qy         1458 TTTTTTTTTTTTTTTTTTTTTACAAGAATT 1484
                ||||||||||||||||||||||||||||
Db            3 TTTTTTTTTTTTTTTTTTTTTACAAGAATT   29

Query Match             1.6%;  Score  27;  DB 6;  Length 687;
Best Local Similarity  100.0%;             Pred. No. 0.21;
Matches   27;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

LOCUS       CR564875               697 bp    mRNA    linear   EST 19-JUL-2004
DEFINITION  CR564875 XGC-tailbud-head Xenopus tropicalis cDNA clone THdA009c20
            3', mRNA sequence.
ACCESSION   CR564875
VERSION     CR564875.1  GI:50394952
KEYWORDS    EST.
SOURCE      Xenopus tropicalis (western clawed frog)
  ORGANISM  Xenopus tropicalis
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
            Xenopodinae; Xenopus; Silurana.
REFERENCE   1  (bases 1 to 697)
  AUTHORS   Croning,M.D.R., Ashurst,J.L., Taylor,R., Garrett,N. and Rogers,J.
  TITLE     Sanger Xenopus tropicalis EST project 2001 (2004)
  JOURNAL   Unpublished (2004)
COMMENT     Contact: Croning MDR
            Sanger Institute
            Hinxton, Cambridgeshire, CB10 1SA, UK
            Email: trop@aanger.ac.uk
            Sanger Xenopus tropicalis EST project 2001
            TROPICALIS_SEQUENCE_ID: THdA009c20.q1kT7
            This sequence is from a Xenopus Gene Collection (XGC) library
            constructed by Nigel Garrett.
            Seq primer: T7.
FEATURES             Location/Qualifiers
     source          1..697
                     /organism="Xenopus tropicalis"
                     /mol_type="mRNA"
                     /db_xref="taxon:8364"
                     /clone="THdA009c20"
                     /dev_stage="tailbud head (stage 28-30)"
                     /lab_host="Escherichia coli DH10B"
                     /clone_lib="XGC-tailbud-head"
                     /note="Vector: pCS107; Site_1: EcoRI; Site_2: NotI; cDNA
                     was oligo dT primed from 5ug of poly A+ RNA from tailbud
                     head. EcoRI-NotI cut cDNA was then ligated into pCS107
                     with EcoRI at the 5' end and NotI at the 3' end."
ORIGIN
```

RESULT 13
CD038829

```
Qy         1458 TTTTTTTTTTTTTTTTTTTTTACAAGAATT 1484
                ||||||||||||||||||||||||||||
Db           14 TTTTTTTTTTTTTTTTTTTTTACAAGAATT   40

Query Match             1.6%;  Score  27;  DB 7;  Length 697;
Best Local Similarity  100.0%;             Pred. No. 0.21;
Matches   27;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

LOCUS       CD038829               720 bp    mRNA    linear   EST 07-MAY-2003
DEFINITION  UTPPI012_G08 USDA-Tifton Peanut Immature Pod cDNA Library Arachis
            hypogaea cDNA clone UTPPI012_G08 5', mRNA sequence.
ACCESSION   CD038829
VERSION     CD038829.1  GI:30420667
KEYWORDS    EST.
SOURCE      Arachis hypogaea (peanut)
  ORGANISM  Arachis hypogaea
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
            rosids; eurosids I; Fabales; Fabaceae; Papilionoideae;
            Aeschynomeneae; Arachis.
REFERENCE   1  (bases 1 to 720)
  AUTHORS   Luo,M., Dang,P., Guo,B.Z., Holbrook,C.C., Lee,R.D., Bausher,M.G.
            and Lynch,R.E.
  TITLE     Generation and Analyses of ESTs for Arachis hypogaea
  JOURNAL   Unpublished (2003)
COMMENT     Contact: Baozhu Guo
            Molecular Genetics
            USDA/ARS, Crop Protection and Management Research Unit
            2747 Davis Rd., Tifton, GA 31794, USA
            Tel: 229-387-2334
            Fax: 229-387-2321
            Email: bguo@tifton.usda.gov
            Seq primer: T3.
FEATURES             Location/Qualifiers
     source          1..720
                     /organism="Arachis hypogaea"
                     /mol_type="mRNA"
                     /cultivar="A13"
                     /db_xref="taxon:3818"
                     /clone="UTPPI012_G08"
                     /tissue_type="Immature pods"
                     /dev_stage="R6"
```

RESULT 14

Qy   1458 TTTTTTTTTTTTTTTTTTTTTTTTTTTACAAGAATT 1484
             |||||||||||||||||||||||||||||||||||
Db   11 TTTTTTTTTTTTTTTTTTTTTTTTTTTTACAAGAATT 37

Qy   Query Match   1.6%;   Score 27;   DB 6;   Length 720;
Best Local Similarity   100.0%;   Pred. No. 0.21;
Matches 27;   Conservative   0;   Mismatches   0;   Indels   0;   Gaps   0;

ORIGIN

LOCUS   CNS04725   818 bp   DNA   linear   GSS 01-SEP-2000
CNS04725
DEFINITION Tetraodon nigroviridis genome survey sequence PUC-Ori end of clone
            089D09 of library G from Tetraodon nigroviridis, genomic survey
            sequence.
ACCESSION   AL278618
VERSION   AL278618.1   GI:8014612
KEYWORDS   GSS; Genome survey sequence.
SOURCE   Tetraodon nigroviridis
ORGANISM   Tetraodon nigroviridis
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
            Acanthomorpha; Acanthopterygii; Percomorpha; Tetraodontiformes;
            Tetraodontoidei; Tetraodontidae; Tetraodon.
REFERENCE   1 (bases 1 to 818)
AUTHORS   Roest Crollius,H., Jaillon,O., Dasilva,C., Bouneau,L., Fisher,C.,
            Bernot,A., Fizames,C., Wincker,P., Brottier,P., Quetier,F.,
            Saurin,W. and Weissenbach,J.
TITLE   Estimate of human gene number provided by genome-wide analysis
            using Tetraodon nigroviridis DNA sequence
JOURNAL   Nat. Genet. 25 (2), 235-238 (2000)
MEDLINE   20296633
PUBMED   10835645
REFERENCE   2
AUTHORS   Roest Crollius,H., Jaillon,O., Dasilva,C., Ozouf-Costaz,C.,
            Fizames,C., Fischer,C., Bouneau,L., Billault,A., Quetier,F.,
            Saurin,W., Bernot,A. and Weissenbach,J.
TITLE   Characterization and repeat analysis of the compact genome of the
            freshwater pufferfish Tetraodon nigroviridis
JOURNAL   Genome Res. 10 (7), 939-949 (2000)
MEDLINE   20359837
PUBMED   1089143
REFERENCE   3 (bases 1 to 818)
AUTHORS   Genoscope.
TITLE   Direct Submission
JOURNAL   Submitted (12-APR-2000) Genoscope - Centre National de Sequencage :
            BP 191 91006 EVRY cedex - FRANCE (E-mail : seqref@genoscope.cns.fr)
COMMENT   - Web : www.genoscope.cns.fr)
            This sequence is a single read and was generated as part of a large

---

scale clone-end sequencing project of the Tetraodon nigroviridis
genome. For more information, please take a look at
http://www.genoscope.cns.fr/tetraodon.

FEATURES   Location/Qualifiers
     source   1..818
                     /organism="Tetraodon nigroviridis"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:99883"
                     /clone="089D09"
                     /clone_lib="G"
                     /note="Genoscope sequence ID : COBG089CB05SP1-end ;
                     PUC-Ori"

ORIGIN

Qy   1449 CTCTGCCTGTTTTTTTTTTTTTTTTTTTTTTTTTTT 1475
             |||||||||||||||||||||||||||||||||||
Db   585 CTCTGCCTGTTTTTTTTTTTTTTTTTTTTTTTTTTT 611

Qy   Query Match   1.6%;   Score 27;   DB 9;   Length 818;
Best Local Similarity   100.0%;   Pred. No. 0.21;
Matches 27;   Conservative   0;   Mismatches   0;   Indels   0;   Gaps   0;

ORIGIN

RESULT 15

LOCUS   CR718261   856 bp   mRNA   linear   HTC 19-AUG-2004
CR718261/c
DEFINITION Tetraodon nigroviridis full-length cDNA.
ACCESSION   CR718261
VERSION   CR718261.1   GI:51216512
KEYWORDS   HTC; cDNA; full-length; Tetraodon nigroviridis.
SOURCE   Tetraodon nigroviridis
ORGANISM   Tetraodon nigroviridis
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
            Acanthomorpha; Acanthopterygii; Percomorpha; Tetraodontiformes;
            Tetraodontoidei; Tetraodontidae; Tetraodon.
REFERENCE   1 (bases 1 to 856)
AUTHORS   Genoscope.
TITLE   Direct Submission
JOURNAL   Submitted (10-AUG-2004) Genoscope - Centre National de Sequencage -
            2 rue Gaston Cremieux, CP 5706 - 91057 EVRY cedex - FRANCE
            (E-mail : seqref@genoscope.cns.fr - Web : www.genoscope.cns.fr)
COMMENT   The sequences are based on single pass reads.
            More information available at
            http://www.genoscope.cns.fr/tetraodon.

FEATURES   Location/Qualifiers
     source   1..856
                     /organism="Tetraodon nigroviridis"
                     /mol_type="mRNA"
                     /db_xref="taxon:99883"
                     /tissue_type="Eggs"

ORIGIN

Qy   1458 TTTTTTTTTTTTTTTTTTTTTTTTTTTACAAGAATT 1484
             |||||||||||||||||||||||||||||||||||
Db   844 TTTTTTTTTTTTTTTTTTTTTTTTTTTTACAAGAATT 818

Qy   Query Match   1.6%;   Score 27;   DB 3;   Length 856;
Best Local Similarity   100.0%;   Pred. No. 0.21;
Matches 27;   Conservative   0;   Mismatches   0;   Indels   0;   Gaps   0;

Search completed: August   9, 2005, 00:13:30
Job time : 7045.94 secs

ORIGIN

FEATURES   Location/Qualifiers
     source
                     /lab_host="X11-blue"
                     /clone_lib="USDA-Tifton Peanut Immature Pod cDNA Library
                     (UTPP)"
                     /note="Vector: Uni-ZAP XR; Site 1: EcoRI; Site 2: XhoI;
                     cDNA library was constructed from peanut cultivar A13.
                     (NCV1lXAR4). A13 has resistance to Aspergillus infection
                     and drought tolerance. The immature pods that developed to
                     R6 stage were collected from different plants, and placed
                     into liquid N2 immediately and stored in -80C freezer.
                     Total RNA was isolated with TRIZOL-Reagent.
                     ultrapure(GIBCOBRL). mRNA was extracted and purified from
                     total RNA (Promega). cDNA synthesis and library
                     construction followed the protocol of by ZAP-cDNA Gigapack
                     III Gold cloning kit (Stratagene). The cDNA above 500bp
                     were collected after size-fraction. The inserts were
                     directionally cloned into Uni-ZAP XR vector using XhoI
                     EcoRI sites adapters. The lamda library was packed into
                     phages using Gigapack III Gold (Stratagene). The
                     un-amplified library was used to excise pBluescript
                     phagemids from the Uni-ZAP XR vector, and the phagemids
                     was used to transform the host bacteria SOLR. The library
                     was constructed by Dr. Meng Luo and Dr. Phat Dang."

OM nucleic - nucleic search, using sw model

Copyright (c) 1993 - 2005 Compugen Ltd.   GenCore version 5.1.6

Run on: August 7, 2005, 08:50:30 ; Search time 337.649 Seconds
                 (without alignments)
                 8034.812 Million cell updates/sec

Title: US-10-787-382-18
Perfect Score: 1658
Sequence: 1 aggcaaacactgaacattc.........gtagtggaagatttggaga 1658
Scoring table: IDENTITY NUC
                 Gapop 10.0 , Gapext 1.0

Searched: 1202784 seqs, 81818359 residues

Total number of hits satisfying chosen parameters: 2405568

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
                 Maximum Match 100%
                 Listing first 45 summaries

Database :   Issued_Patents NA:*
                 1: /cgn2_6/ptodata/1/ina/5A_COMB.seq:*
                 2: /cgn2_6/ptodata/1/ina/5B_COMB.seq:*
                 3: /cgn2_6/ptodata/1/ina/6A_COMB.seq:*
                 4: /cgn2_6/ptodata/1/ina/6B_COMB.seq:*
                 5: /cgn2_6/ptodata/1/ina/PCTUS_COMB.seq:*
                 6: /cgn2_6/ptodata/1/ina/backfiles1.seq:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Match Length	DB	ID	Description
1	600.6	36.2	3230	3	US-09-280-799-78	Sequence 78, Appl
2	600.6	36.2	3230	6	5324640-1	Patent No. 5324640
3	600.6	36.2	3230	6	5324640-1	Patent No. 5324640
4	171.8	10.4	610	4	US-09-322-409-80	Sequence 80, Appl
5	171.8	10.4	610	4	US-09-322-409-82	Sequence 82, Appl
6	171.8	10.4	610	4	US-09-451-527-80	Sequence 80, Appl
7	171.8	10.4	610	4	US-09-451-527-82	Sequence 82, Appl
8	145.8	8.8	402	4	US-09-322-409-83	Sequence 83, Appl
9	145.8	8.8	402	4	US-09-322-409-84	Sequence 84, Appl
10	145.8	8.8	402	4	US-09-451-527-83	Sequence 83, Appl
11	145.8	8.8	402	4	US-09-451-527-84	Sequence 84, Appl
c 12	145.8	7.9	405	4	US-09-371-615A-1	Sequence 1, Appl
c 13	131.6	7.9	345	4	US-09-322-409-85	Sequence 85, Appl
c 14	131.6	7.9	345	4	US-09-322-409-87	Sequence 87, Appl
c 15	131.6	7.9	345	4	US-09-451-527-85	Sequence 85, Appl
c 16	131.6	7.9	345	4	US-09-451-527-87	Sequence 87, Appl
c 17	117.4	7.1	816	3	US-09-079-833-2	Sequence 2, Appl
18	117.4	7.1	816	3	US-09-023-655-1236	Sequence 1236, Ap
19	108	6.5	6727	3	US-08-629-643A-5	Sequence 5, Appl
20	108	6.5	6727	3	US-09-280-799-1	Sequence 1, Appl
21	108	6.5	6727	3	US-09-155-884-5	Sequence 5, Appli
22	97.2	5.9	444	4	US-09-556-818-43	Sequence 43, Appl
23	89.4	5.4	381	4	US-09-556-818-27	Sequence 27, Appl
24	87.2	5.3	393	3	US-09-556-818-41	Sequence 41, Appli
25	87.2	5.3	1534	3	US-08-629-643A-4	Sequence 4, Appli
26	87.2	5.3	1534	3	US-09-155-884-4	Sequence 4, Appli
27	87	5.2	375	4	US-09-556-818-37	Sequence 37, Appl
28	87	5.2	399	4	US-09-556-818-39	Sequence 39, Appl
29	85.2	5.1	377	3	US-09-180-864-1	Sequence 1, Appli
30	83.2	5.0	375	4	US-09-556-818-45	Sequence 45, Appl
31	81.8	4.9	357	4	US-09-556-818-35	Sequence 35, Appl
32	81.4	4.9	438	4	US-09-556-818-59	Sequence 59, Appl
33	80.8	4.9	369	4	US-09-556-818-53	Sequence 53, Appl
34	80.8	4.9	387	4	US-09-556-818-57	Sequence 57, Appl
35	80.8	4.9	393	4	US-09-556-818-55	Sequence 55, Appl
c 36	80.6	4.8	375	4	US-09-556-818-29	Sequence 29, Appl
37	79.6	4.8	351	4	US-09-556-818-51	Sequence 51, Appl
38	77.2	4.7	369	4	US-09-556-818-47	Sequence 47, Appl
39	77.2	4.7	375	4	US-09-556-818-33	Sequence 33, Appl
40	72	4.3	375	4	US-09-556-818-31	Sequence 31, Appl
c 41	61	3.7	1141	4	US-09-806-708B-22	Sequence 22, Appl
c 42	58.8	3.5	1141	4	US-09-806-708B-22	Sequence 22, Appl
c 43	55	3.3	640681	4	US-09-790-988-1	Sequence 1, Appli
c 44	52.2	3.1	601	4	US-09-949-016-30531	Sequence 30531, A
45	52.2	3.1	601	4	US-09-949-016-37150	Sequence 37150, A

ALIGNMENTS

RESULT 1
US-09-280-799-78

; Sequence 78, Application US/09280799
; Patent No. 6136603
; GENERAL INFORMATION:
; APPLICANT: Dean, Nicholas M.
; APPLICANT: Karras, James G
; APPLICANT: McKay, Robert
; TITLE OF INVENTION: ANTISENSE MODULATION OF INTERLEUKIN-5 SIGNAL
; TITLE OF INVENTION: TRANSDUCTION
; FILE REFERENCE: ISPH-0340
; CURRENT APPLICATION NUMBER: US/09/280,799
; CURRENT FILING DATE: 1999-03-26
; NUMBER OF SEQ ID NOS: 208
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 78
; LENGTH: 3230
; TYPE: DNA
; ORGANISM: Homo sapiens
US-09-280-799-78

  Query Match   36.2%; Score 600.6; DB 3; Length 3230;
  Best Local Similarity   67.8%; Pred. No. 1.7e-131;
  Matches 1212; Conservative   0; Mismatches 384; Indels 191; Gaps 19;

Qy   1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
              ||||||||||||||||||| ||||||||| ||||||| ||||| |||||||| ||||||
Db   527 AGGCAAACGCAGAACAGTTTCAGAGCCATGAGGATGCTTCTCGCATTTGAGTTTGCTAGCTC 586

Qy   61 TTGGGGCTGCGCCTATGTTTCTGCCTTTGCTGTGAGAAAATCCCATGAATAGAACTGGGTGGCAG 120
              ||||| || ||||| |||||| || ||||| ||||| |||||| ||||| |||||||||
Db   587 TTGGAGCTGCCTACGTGTATGCCATCCCACAGAAAATCCCACAAGTGCCATTGGTGAAAG 646

Qy   121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGGTAATTGT 180
              |||||||| ||| ||| | |||| ||| | ||| |||||||||||| |||||||||||
Db   647 AGACCTTGGCACTGCTTTCTCACTCATCGAACTCTGCTGATAGGCCAATGAGGTAATTTTCT 706

Qy   181 TTTTGATTCCTACAGTCTCTTTAAAAAAATGCATGGGTAATTTGGTGTGGTTGCTAGTT----- 234
              |||||||| |||||||| ||||| |||| ||||| ||| |||| |||| |||||||||
Db   707 TTATGATTCCTACAGTCTGTAAAGTGCATAGGTAATCATTTGTGATGGTTCCTTTACTAT 766

Qy   235 -TTTAAAGATCCATTATCAATAATGAAGTAATGAGTGTTAATAATAATATAATGGGTAACC 293
               |||||||||||| ||||||||| |||| |||| |||| |||| |||||||| |||||||
Db   767 ATATAGAGATCTGTTATAAAATAAGATTCTGAG-CACATTAGTACATGGGGTGATAACT 825

Qy   294 ATGTTACTCAGAAGAATTATATTAAAAAGTTATGAACCTTACAATACATTAAAAATGAATG 353
              |||| ||| |||| |||||| |||| |||||||||||||| |||||||||| |||||| |||
Db   826 ACATCACGCAGCAAACATTCTGTTAAAAGTTATGAATGCTGGTGGTGTGCTGTAAAATGATTG 885

Qy   354 TTGTTTCCTTTCTTTTTTTCAGAACCTGATGATTCCTACTCCTGAAAAAATAAAAATGAAGTT 413

```
               | ||||||||| | | |||||  |||| ||||||  ||||| | |||||||||||||||
Db        886 -TATTTCCTTTCCTCTCCAGACTCTGAGGATTCCTGTTCCTGTACATAAAAATGTAAGTT 944

Qy        414 AAATTATGATTTGATAAAATGATTACATGAATCAG----TTTCATATTTTAAGCTATAAA 469
              |||||||||||   ||||||||||  |||||||| ||    |||| | |||||||| ||||
Db        945 AAATTATGATTCAGTAAAATGATGGCATGAATAAGTAAATTTCCTGTTTTAAGCTGTAAA 1004

Qy        470 GTATCAGTTAACATTGGGATGATTTAATTTTATCTATTTTGTTTTTATGTGTGCGGATGT 529
                || ||||| |||||| |  ||||||||||| | ||||||||||| || || | || |||
Db       1005 TCATTAGTTATCATTGGAACTATTTAATTTTCTATATTTTGTTTTCATATGGGTGGCTGT 1064

Qy        530 AAAT-TATGTGCTTATGAATATTAGGAATGGTGTTAGGAATGGCTCTACAATATTAAGTA 588
               ||| | ||| ||||| |||||| |||||||   ||                ||| |||||
Db       1065 GAATGTCTGTACTTATAAATATGAGGAATGACTTT---------------TTATCAAGTA 1109

Qy        589 GAATCCATTAAGCAAGTGGATCAGGCCCTTTTTTGATGTTGTCAGTTCTCCATCTCAAAG 648
              |||||| |||| ||||||||| |||| ||||  |||||||||| ||||  || || |||||
Db       1110 GAATCCTTTAAACAAGTGGATTAGGCTCTTTGGTGATGTTGTTAGTTTGCCTTCCCAAAG 1169

Qy        649 AGCCTCGTGTCAGGCATTCTTTCCAAAAGAATTCCATATTGGGTCAGAGATACTTCCTAG 708
              ||| ||||||||||| |||||||||| ||| |||||| | || || |||| | | | ||||
Db       1170 AGCATCGTGTCAGG-ATTCTTTCCAGAAGGATTCCACACTGAGTGAGAGGTGCGTGCTAG 1228

Qy        709 GCTCCATTCACCTCTGTCGTTGGCTTTCCTCACCTCAACGTTTTTCTGAAAGTACTAGCA 768
               |||| | ||  |||| |       || |||||   ||||| |||||||||||| |||||
Db       1229 TCTCCGTGCAGTTCTGAC-----TCTTTCTCACTCTAACGTGTTTCTGAAAGTATTAGCA 1283

Qy        769 ACTTGGGGTTATATTTTTAGAATTATGGTCAGTAGACATGAAAATATACAGTGAAGTCCT 828
              |||  |  ||||||||||||||  ||| ||||||||||| |||||||| |   ||  ||
Db       1284 ACTCAGAATTATATTTTTAGAACCATGATCAGTAGACATTAAAATATATAACAAATGCC- 1342

Qy        829 ATATTAATAGTCACTTCCACATATTTAAATGATTTTTAACTCTAATGGAATCATATACAT 888
                 |  ||    | |||  |||| |||||| ||| | |         |     ||| |||
Db       1343 --CTATATTAATAATTCTGCATACTTAAATAATTATGACTATATGATGGTGTGTATGCAT 1400

Qy        889 CTGGAGTATGTCATGGTCATATTAAAATGTTAAAAATGTGATATCATTAGTCTAAATAGA 948
                    |     | |||||||||||||||||| ||| || |  | | |||||||||||||||
Db       1401 TGAATATG---CCTGGTCATATTAAAATGTAAAATATATAGTTT-ATTAGTCTAAATAGA 1456

Qy        949 ATAAAATTACCAGCTAGAACTATACGAGGAAATTCTGAGGTGAGGTAAATCAGTAAGGCA 1008
              |||||| |||||||||||||| ||  |  | ||  |||  |||| | |||   ||| ||
Db       1457 ATAAAACTACCAGCTAGAACTGTAGAAACACAT--TGATATGAGTTTAATGTATAATGC- 1513

Qy       1009 GTTGTATTATACCTCGTAAGCATTTATTTTTCATTAATCATTTCATTTATATCATTTGTA 1068
                   |||| || ||  || ||||| |||    |||   | || | |||||| ||| ||
Db       1514 -----ATTACACTTCCAAAACATTTTTTTCCAGTTACATAATTAAGTTATATCCTTTATA 1568

Qy       1069 ACACTTCTCAGTAATTATATAAACATCATTTAC-TTATGGTAATTATAGCTTAGTATAAG 1127
              | ||| ||||||||| |||||| | |||| ||| || ||  |||| || |||| |||  |
Db       1569 AAACTCCTCAGTAATCATATAAGCTTCATCTACTTTTTGAAAATTTTATCTTAATATGTG 1628

Qy       1128 GTGGTTTCCCACCTGGAAAAGACACAAGTAAAAACCTCTTGGGAGAAGGGAACTTGTGTA 1187
              |||||||     ||| ||||    ||||  ||||| ||||| |||||||||||||  ||||
Db       1629 GTGGTTTGTTGCCTAGAAA----ACAAACAAAAAACTCTTTGGAGAAGGGAACTCATGTA 1684

Qy       1188 AACCCCACAAAACAAAGTCTAACTTTT--------------------------------- 1214
              ||  ||||||||||||| ||||||||
Db       1685 AATACCACAAAACAAAGCCTAACTTTGTGGACCAAAATTGTTTAATAATTATTTTTTAA 1744

Qy       1215 ------------------------------------------------------------ 1214

Db       1745 TTGATGAATTAAAAAGTATATATATTTATTGTGTACAATATGATGTTTTGAAGTATGTAT 1804

Qy       1215 ------------------TGGACCAAATTTTTATGCCTTGTTTTGATGAATTATATTTTT 1256
                                ||||||||||||||||| |||||| ||||| | ||  | ||||
Db       1805 ACATTGCAGAATGGACAATGGACCAAATTTTTATACCTTGTCTTGATTATTTGCA-TTTT 1863

Qy       1257 TAAAATCTTCCTCATTTAGCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACAC 1316
               ||||| ||||||||||||||||||||||||| | ||||| | ||||||||| |||| |||
Db       1864 AAAAATTTTCCTCATTTAGCACCAACTGTGCACTGAAGAAATCTTTCAGGGAATAGGCAC 1923

Qy       1317 ATTGAAGAACCAAACTGCCCACGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTT 1376
              | || |||  |||||||  || ||||   ||||||| | ||||||| |||||||||| ||
Db       1924 ACTGGAGAGTCAAACTGTGCAAGGGGGTACTGTGGAAAGACTATTCAAAAACTTGTCCTT 1983

Qy       1377 AATAAAAGAACACATAGAGCGCCAAAAAGTAAGTTAAAGACATTTGGCAAAAACTTAAGT 1436
              ||||||  || |||| ||  |||||||||||||||||| | |||||      || ||  | |
Db       1984 AATAAAGAAATACATTGACGGCCAAAAAGTAAGTTACACACATTCAATGGAAGCTATATT 2043

Qy       1437 ATATTTGTCTGACTCTGCCTGTTTTTTTTTTTTTTTTTTACAAGAATTGACAGTTTCCTA 1496
                   || |||                  |   | |||     ||||||||||||||||
Db       2044 TGTCCTGGCTG------------------TGCCTATTTCTATGGAATTGACAGTTTCCTG 2085

Qy       1497 CAATATCT------CCTCTGTTCTTTTAACAGAAAAGGTGTGCAGGAGAAAGATGGAGAG 1550
               |||| ||        | |  | |||| |||||||| ||||| || |||||||| ||||||
Db       2086 TAATACCTATTGTCATTTTTCTTTTTTCACAGAAAAAGTGTGGAGAAGAAAGACGGAGAG 2145

Qy       1551 TGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGACAC 1610
              | |   | |||||||||||||||||||  ||||||||||||||| ||||||||||||| |
Db       2146 TAAACCAATTCCTAGACTACCTGCAAGAGTTTCTTGGTGTAATGAACACCGAGTGGATAA 2205

Qy       1611 CGGAAAGTTGAGAACAAACCGGCTTATTGTAGTGGAAGATTTTGGAG 1657
                |||||||||||  |||| || || ||| ||   ||||||||||||
Db       2206 TAGAAAGTTGAGACTAAACTGGTTTGTTGCAGCCAAAGATTTTGGAG 2252

RESULT 2
5324640-1
;Patent No. 5324640
;    APPLICANT: Honjo, Tasuku;Takatsu, Kiyoshi;Severinson, Eva
;    TITLE OF INVENTION: HUMAN B-CELL DIFFERENTIATION FACTOR AND
;PROCESS OF PRODUCING SAID FACTOR
;    NUMBER OF SEQUENCES: 2
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/99,467
;      FILING DATE: 21-SEP-1987
;SEQ ID NO:1:
;      LENGTH: 3230
5324640-1

  Query Match             36.2%;  Score 600.6;  DB 6;  Length 3230;
  Best Local Similarity   67.8%;  Pred. No. 1.7e-131;
  Matches 1212;  Conservative    0;  Mismatches  384;  Indels  191;  Gaps   19;

Qy          1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
              |||||||| | |||| |||||||||| |||||| |||||||||| ||||||||||||||||||
Db        527 AGGCAAACGCAGAACGTTTCAGAGCCATGAGGATGCTTCTGCATTTGAGTTTGCTAGCTC 586

Qy         61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAG 120
              |||| |||||||| || | ||| |  |   ||||| |||||  | |  |  |||||  ||
Db        587 TTGGAGCTGCCTACGTGTATGCCATCCCCACAGAAATTCCCACAAGTGCATTGGTGAAAG 646

Qy        121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGTAATTTTCT 180
              |||||||| ||||||| || ||||||||||||||  |||||||| | ||| ||||||||||||
Db        647 AGACCTTGGCACTGCTTTCTACTCATCGAACTCTGCTGATAGCCAATGAGGTAATTTTCT 706

Qy        181 TTTTGATTCCTACAGTCTTTAAAATGCATGGGTAATTGGTGGTGGTGGCTAGTT------ 234
              || ||||||||||||||| |||| ||||| ||||||   | ||| ||| |  ||
Db        707 TTATGATTCCTACAGTCTGTAAAGTGCATAGGTAATCATTTGTGATGGTTCCTTTACTAT 766

Qy        235 -TTTAAAGATCCATTATCAATAATGAAGTAATGAGTGTTAATAATATATAATGGGTAACC 293
               | || |||||  |||| |||||| |  |  ||||    | || || ||    | ||||
Db        767 ATATAGAGATCTGTTATAAATAATAAGATTCTGAG-CACATTAGTACATGGGTGATAACT 825

Qy        294 ATGTTACTCAGAAGAATTATATTAAAAGTTATGAACCTTACAATACATTAAAAATGAATG 353
              |  | ||    ||  ||| | |||||||||||||||   |    | |  |||||||||| ||
Db        826 ACATCACCAGCAAACATTCTGTTAAAAGTTATGAATGCTGGTGTGCTGTAAAAATGATTG 885

Qy        354 TTGTTTCCTTTCTTTTTCAGAACCTGATGATTCCTACTCCTGAAAATAAAAATGTAAGTT 413
               | ||||||||| | | ||||  |||| |||||||  |||||| | |||||||||||||||
Db        886 -TATTTCCTTTCCTCTCCAGACTCTGAGGATTCCTGTTCCTGTACATAAAAATGTAAGTT 944

Qy        414 AAATTATGATTTGATAAAATGATTACATGAATCAG----TTTCATATTTTAAGCTATAAA 469
              |||||||||||   ||||||||||  |||||||| ||    |||| | |||||||| ||||
Db        945 AAATTATGATTCAGTAAAATGATGGCATGAATAAGTAAATTTCCTGTTTTAAGCTGTAAA 1004
```

RESULT 3
5324640-1
;Patent No. 5324640
; APPLICANT: Honjo, Tasuku;Takatsu, Kiyoshi;Severinson, Eva
; TITLE OF INVENTION: HUMAN B-CELL DIFFERENTIATION FACTOR AND
; PROCESS OF PRODUCING SAID FACTOR
; NUMBER OF SEQUENCES: 2
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/99,467
; FILING DATE: 21-SEP-1987
;SEQ ID NO:1:
; LENGTH: 3230

5324640-1

Query Match 36.2%; Score 600.6; DB 6; Length 3230;
Best Local Similarity 67.8%; Pred. No. 1.7e-131;
Matches 1212; Conservative 0; Mismatches 384; Indels 191; Gaps 19;

```
Qy   589  GAATCCATTAAGCAAGTGGGATCAGGCCCTTTTTGAGTGTTGTCAGTTCTCCATCTCAAAG  648
          ||||||| |||||||||||||||| ||||| |||| | ||||| ||| |||||| | |||||
Db  1110  GAATCCTTTAAACAAGTGGGATTAGGCCTCTTTGGGTGATTGTTGTTTAGTTGCCTTCCCAAAG  1169

Qy   649  AGCCTCGTGTGTCAGGCATTCTTCTTCCAAAAGAAATTCATATTGGGTCAGAGATACTTCCTAG  708
          ||| |||||||||||| ||||||| ||| ||| ||||||||| ||| || || || || |||||
Db  1170  AGCATCGTGTGTCAGG-ATTCTTTCCAGAAGGATTCCACACTGAGTGAGGTGCGTGCCTAG  1228

Qy   709  GCTTCCATTCACCTCTGTTCGTTGGCTTTCCTTCCAACGTTTTTCTGAAAGTACTAGCA  768
          ||||||||||||||  |  | ||  |||||||||||||| |||||||||||||| |||||
Db  1229  TCTCCGTGCAGTTCTGAC------TCTTTCTCACTCTAAACGTGTTTCTGAAAGTATTAGCA  1283

Qy   769  ACTTGGGGTTTATATTTTTAGAATTATGGGTCAGTAGAGACATGAAAATATACAGTGAAGTCCT  828
          |||| |||||||||||||||| |||| |||||| ||||||  || || |||| |||| |||||
Db  1284  ACTCAGAATATATATTTTTAGAACCATGATCAGTAGTAGACAATTAAAATATAACAAATGCC-  1342

Qy   829  ATATTAAATAGTCACTTCCACATATTTTTAAATGATTTTTAAATGGAATCATATACAT  888
          ||||||||||| |||||| || ||||||||||| ||||||| ||| || |||| |||
Db  1343  --CTATTAATAATTCTGCATACTTAAATAATTATGACTATATCAT  1400

Qy   889  CTGGAGTAGTGTCATGGTCATATTAAAATGTTAAAAATGTGAATATACATTAGTCAGAAGATAGA  948
          |||||||| || || |||||||||||||| | || ||  || || ||| ||| || || |||||
Db  1401  TGAATATG---CCTGGTCATATTAAAATGTAAAAATATAGTTT-ATTAGTCTAAAATAGA  1456

Qy   949  ATAAAAATTACCAGCTAGAGACTATACGAGGAAATTCTGAGGGTGAGGTAAATCAGTAAGGCA  1008
          |||||||  |  || ||| ||||| || |||||| ||| ||||  || |||||  || |||||
Db  1457  ATAAAAACTACCAGCTAGAAACTGTAGAAAACACAT--TGATATGAGTTTAATGTATATAGC-  1513

Qy  1009  GTTGTATTATATACCTGTTAAGCATTTATTTTCATTTAATCATTTTCATTTATATCATTTGTA  1068
          |||||||||| || ||||| || || |||| ||||||| ||||| |||||| |||| |||||
Db  1514  -----ATTACACTTCCAAAACATTTTTTCCAGTTACATTATTAAGTTATATCCTTTATA  1568

Qy  1069  ACACTTCTCAGTAATTATATAAAACATCATTTAC-TTATGGTAATAATTATAGCTTAGTATAAG  1127
          |||||| | ||||| |||||| || ||||| ||  ||| |||||| ||| || |||| |||||
Db  1569  AAACTCCTCAGTAATCATATAAGCTTCATCTACTTTTTGAAAATTTATCTTAATATGTG  1628

Qy  1128  GTGGTTTCCACCTGGAAAAGACACAAGTAAAAACCTCTCTGGGAGGAAGGGAACTTGTGTA  1187
          | ||||| |  ||||||||  |||| ||||||||| || || ||| ||||| |||| ||||
Db  1629  GTGGGTTTGTTGCCTAGAAA----ACAAACAAAAACTCTTTGGGAGAAGGGGAACTCATGTA  1684

Qy  1188  AACCCCACAAAAACAAAGTCTAACTTTT-------  1214
          ||| ||||||||| ||||| |||||||||
Db  1685  AATACCACAAAAACAAAGCCTAACTTTGTGTGACCAAAATTGTTTAATAATTATTTTTAA  1744

Qy  1215  -------  1214
          
Db  1745  TTGATGAATTAAAAAGTATATATTTATTGTGTACAATATGATGTTTGAAGTATGTAT  1804

Qy  1215  -------  1214
          
Db  1805  ACATTGCAGAATGGACAAATGGACCAAAATTTTATACCTTGTCTTGAATTATTGCA-TTTT  1863

Qy  1257  TAAAATCTTCCTCATTTTAGCACCAACTACTGTAAAAGAAGTTTTTCAGGTATAGACAC  1316
          ||||||||| |||| ||| || || |||| ||||| || ||||| |||||||||||||
Db  1864  AAAAATTTTCCTCATTTTAGCACCAACTGTGCACTGAAGAAATCTTTCAGGGAATAGGCAC  1923

Qy  1317  ATTGAAGAAGAACCAAAACTGCCCCACGCGGGGAGGGCTGCTGGGATAAGAACTATTCCAAAACTTGTCTTT  1376
          |||||| |||| || ||||| ||||| |||||||||||||||||| |||||| || || |||||||||| |
Db  1924  ACTGGAGAGTCAAACTGTGCAAGGGGTACTGTGGGAAAGACTATTCAAAAAACTTGTCCTT  1983

Qy  1377  AATAAAAGAACACATAGAGCGCCCAAAAAGTAAGTTAAAGACAATTTGGCAAAGTTAAGT  1436
          ||| |||| || | |||| |||| |||||||||| ||||| ||| || |||||| ||||
Db  1984  AATAAAGAAATACATTGACGGGCCAAAAAAGTAAGTTACACACATTTATATT  2043

Qy  1437  ATATTTGTTCTGACTCTGCCGTGTTTTTTTTTTTTTACAAGAATTGACAGTTTCCTA  1496
          |||||| ||||||||||||| ||| |||||||  ||||| ||||||||| || ||||
Db  2044  TGTCCTGGCTG--------TGCCTATTTCTATGGAATTGACAGTTTCCTG  2085

Qy  1497  CAATATCT------CCTCTGTTCTTTTTAACGAAAAAGGTGTTGCGAGCAGGAGAAAAGATGGAGAG  1550
          ||| ||||      ||| || |||||| || ||||| || |||| || || || ||||| ||||||
Db  2086  TAATACCTATTGTCATTTTTCTTTTTCACAGAAAAAGTGTGGGAGAAGAAAAGACGGAGAG  2145
```

```
Qy  1551  TGACAAAGTTCCTAGACTACCTGCCAAGTATTGTTTCTTGGTGTAATAAACACCGAGTGGACAC  1610
          |||||| ||||| |||||||||||||| |||| ||||| || || ||||| ||||||||| |||
Db  2146  TAAACCAATTCCTAGACTACCTGCCAAGAGAGTTTCTTGGGTGTAATGAACACCGAGTGGATAA  2205

Qy  1611  CGGAAAGTTGAGAACAAACCGGCTTATTTGTAGTGGNGAAGATTTGGGAG  1657
          ||||| |||||||| ||| || || || ||||||| ||||||||||||||
Db  2206  TAGAAAGTTGAGAGACTAAACTGGTTGTTTGTCGAGCCAAAAGATTTGGGAG  2252
```

RESULT 4

US-09-322-409-80

```
; Sequence 80, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shumin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C1
;   CURRENT APPLICATION NUMBER: US/09,322,409
;   CURRENT FILING DATE: 1999-05-28
;   EARLIER APPLICATION NUMBER: 60/087,306
;   EARLIER FILING DATE: 1998-05-29
;   NUMBER OF SEQ ID NOS: 154
;   SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 80
;   LENGTH: 610
;   TYPE: DNA
;   ORGANISM: Canis familiaris
;   FEATURE:
;     NAME/KEY: CDS
;     LOCATION: (29)..(430)
US-09-322-409-80
```

```
Query Match       10.4%;  Score 171.8;  DB 4;  Length 610;
Best Local Similarity  93.7%;  Pred. No. 6.7e-31;
Matches   179;  Conservative 0;  Mismatches 12;  Indels 0;  Gaps 0;
```

```
Qy    1  AGGCAAACACTGAACANTTCAGAGCTATGAGAATGCTTCTGAAATTGCTGCTAGCTC  60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3  AGGCAAACACTGAACANTTCAGAGCTATGAGAATGCTTCTGAAATTGCTGCTAGCTC  62

Qy   61  TTGGGGCCTGCCTATGTTTCTGCCTTTGCTCTAGAAAAATCCCATGAATAGAGCGGTGGGCAG  120
         |||||| ||||||||||||||||||||||| ||||||||||||||||||||||| ||||||||
Db   63  TTGGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAAATCCCATGAATAGAGACTGGGTCGGCAG  122

Qy  121  AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGTAATTTTCT  180
         ||||||||||||| ||||||||||||||| |||||||||||||||| ||||| |||||||
Db  123  AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGAACCTGATGA  182

Qy  181  TTTTGATTCCT  191
         ||||||||||
Db  183  TTCCTACTCCT  193
```

RESULT 5

US-09-322-409-82/c

```
; Sequence 82, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
;   APPLICANT: Sim, Gek-Kee
;   APPLICANT: Yang, Shumin
;   APPLICANT: Dreitz, Matthew J.
;   APPLICANT: Wonderling, Ramani S.
;   TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;   TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
;   FILE REFERENCE: IM-2-C1
;   CURRENT APPLICATION NUMBER: US/09,322,409
;   CURRENT FILING DATE: 1999-05-28
;   EARLIER APPLICATION NUMBER: 60/087,306
;   EARLIER FILING DATE: 1998-05-29
```

```
NUMBER OF SEQ ID NOS: 154
SOFTWARE: PatentIn Ver. 2.0

SEQ ID NO 82
LENGTH: 610
TYPE: DNA
ORGANISM: Canis familiaris

US-09-322-409-82

Query Match      93.7%;   Score 171.8;  DB 4;  Length 610;
Best Local Similarity  93.7%;   Pred. No. 6.7e-31;
Matches 179;  Conservative  0;  Mismatches  12;  Indels  0;  Gaps  0;

Qy    1 AGGCAAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  608 AGGCAAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 549

Qy   61 TTGGGGGCTGCCTATGTTTCTCGCCTTTGCTGTAGAAAAATCCCATGAATTTGAGTTTGGTGGCAG 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  548 TTGGGGGCTGCCTATGTTTCTCGCCTTTGCTGTAGAAAAATCCCATGAATTTGAGTTTGGTGGCAG 489

Qy  121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGTAATTTTCT 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db  488 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGAACCTGATGA 429

Qy  181 TTTTGATTCCT 191
          ||  ||||||
Db  428 TTCCTACTCCT 418
```

RESULT 6
US-09-451-527-80
Sequence 80, Application US/09451527
Patent No. 6482403
GENERAL INFORMATION:
APPLICANT: Sim, Gek-Kee
APPLICANT: Yang, Shumin
APPLICANT: Dreitz, Matthew J.
APPLICANT: Wonderling, Ramani S.
TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
FILE REFERENCE: IM-2-C2
CURRENT APPLICATION NUMBER: US/09/451,527
CURRENT FILING DATE: 1999-12-01
EARLIER APPLICATION NUMBER: 09/322,409
EARLIER FILING DATE: 1999-05-28
EARLIER APPLICATION NUMBER: 60/087,306
EARLIER FILING DATE: 1998-05-29
NUMBER OF SEQ ID NOS: 174
SOFTWARE: PatentIn Ver. 2.0

SEQ ID NO 80
LENGTH: 610
TYPE: DNA
ORGANISM: Canis familiaris

FEATURE:
NAME/KEY: CDS
LOCATION: (29)..(430)

US-09-451-527-80

Query Match   93.7%;   Score 171.8; DB 4; Length 610;
Best Local Similarity 93.7%;   Pred. No. 6.7e-31;
Matches 179; Conservative 0; Mismatches 12; Indels 0; Gaps 0;

```
Qy    1 AGGCAAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||
Db    3 AGGCAAACATGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 62

Qy   61 TTGGGGGCTGCCTATGTTTCTCGCCTTTGCTGTAGAATGCTTCTGAATTTGAGTTTGGTGGCAG 120
          |||||||||||||||||||||||||||||||||||||||||||||||||
Db   63 TTGGGGGCTGCCTATGTTTCTCGCCTTTGCTGTAGAAAATCCCATGAATTGAGTTTGGCCAG 122

Qy  121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGTTAATTTTCT 180
          |||||||||||||||||||||||||||||||||||||||||||||||
Db  123 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGAACCTGATGA 182
```

RESULT 7
US-09-451-527-82/c
Sequence 82, Application US/09451527
Patent No. 6482403
GENERAL INFORMATION:
APPLICANT: Sim, Gek-Kee
APPLICANT: Yang, Shumin
APPLICANT: Dreitz, Matthew J.
APPLICANT: Wonderling, Ramani S.
TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
FILE REFERENCE: IM-2-C2
CURRENT APPLICATION NUMBER: US/09/451,527
CURRENT FILING DATE: 1999-12-01
EARLIER APPLICATION NUMBER: 09/322,409
EARLIER FILING DATE: 1999-05-28
EARLIER APPLICATION NUMBER: 60/087,306
EARLIER FILING DATE: 1998-05-29
NUMBER OF SEQ ID NOS: 174
SOFTWARE: PatentIn Ver. 2.0

SEQ ID NO 82
LENGTH: 610
TYPE: DNA
ORGANISM: Canis familiaris

US-09-451-527-82

Query Match   93.7%;   Score 171.8; DB 4; Length 610;
Best Local Similarity 93.7%;   Pred. No. 6.7e-31;
Matches 179; Conservative 0; Mismatches 12; Indels 0; Gaps 0;

```
Qy    1 AGGCAAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  608 AGGCAAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 549

Qy   61 TTGGGGGCTGCCTATGTTTCTCGCCTTTGCTGTAGAAAAATCCCATGAATTTGAGTTTGGTGGCAG 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  548 TTGGGGGCTGCCTATGTTTCTCGCCTTTGCTGTAGAAAAATCCCATGAATTTGAGTTTGGTGGCAG 489

Qy  121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGTAATTTTCT 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db  488 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGAACCTGATGA 429

Qy  181 TTTTGATTCCT 191
          ||  ||||||
Db  428 TTCCTACTCCT 418
```

RESULT 8
US-09-322-409-83
Sequence 83, Application US/09322409
Patent No. 6471957
GENERAL INFORMATION:
APPLICANT: Sim, Gek-Kee
APPLICANT: Yang, Shumin
APPLICANT: Dreitz, Matthew J.
APPLICANT: Wonderling, Ramani S.
TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
FILE REFERENCE: IM-2-C1
CURRENT APPLICATION NUMBER: US/09/322,409
CURRENT FILING DATE: 1999-05-28
EARLIER APPLICATION NUMBER: 60/087,306
EARLIER FILING DATE: 1998-05-29
NUMBER OF SEQ ID NOS: 154
SOFTWARE: PatentIn Ver. 2.0

SEQ ID NO 83
LENGTH: 402

RESULT 9
US-09-322-409-84/c
; Sequence 84, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 84
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-322-409-84

Query Match 8.8%; Score 145.8; DB 4; Length 402;
Best Local Similarity 92.7%; Pred. No. 7.6e-25;
Matches 153; Conservative 0; Mismatches 12; Indels 0; Gaps 0;

Qy 27 ATGAGAATGCTTCTGAAATTTGAGTTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 86
     ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1 ATGAGAATGCTTCTGAAATTTGAGTTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 60

Qy 87 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 146
     ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 61 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy 147 CGAACTTGGCTGATAGGCGATGGGGGTAAATTTTCTTTTTTTGATTCCT 191
     |||||||||||| |||||||||| ||||||||||||||||
Db 121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCT 165

RESULT 10
US-09-451-527-83
; Sequence 83, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF

RESULT 11
US-09-451-527-84/c
; Sequence 84, Application US/09451527
; Patent No. 6482403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 84
; LENGTH: 402
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-451-527-84

Query Match 8.8%; Score 145.8; DB 4; Length 402;
Best Local Similarity 92.7%; Pred. No. 7.6e-25;
Matches 153; Conservative 0; Mismatches 12; Indels 0; Gaps 0;

Qy 27 ATGAGAATGCTTCTGAAATTTGAGTTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 86
     ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1 ATGAGAATGCTTCTGAAATTTGAGTTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 60

Qy 87 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 146
     ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 61 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy 147 CGAACTTGGCTGATAGGCGATGGGGGTAAATTTTCTTTTTTTGATTCCT 191
     |||||||||||| |||||||||| ||||||||||||||||
Db 121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCT 165

Query Match 8.8%; Score 145.8; DB 4; Length 402;
Best Local Similarity 92.7%; Pred. No. 7.6e-25;
Matches 153; Conservative 0; Mismatches 12; Indels 0; Gaps 0;

Qy 27 ATGAGAATGCTTCTGAAATTTGAGTTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT 86
     |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 402 ATGAGAATGCTTCTGAATTTTGAGTTTTGCTAGCTCTTGGGGGCTGCCTATGTTTCTGCCTTT 343

Qy 87 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 146
     ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 342 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 283

Qy 147 CGAACTTGGCTGATAGGCGATGGGGGTAAATTTTCTTTTTTTGATTCCT 191
     |||||||||||| |||||||| ||| ||||||||||||||||
Db 282 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCT 238

RESULT 12
US-09-371-615A-1
; Sequence 1, Application US/0937161SA
; Patent No. 6537781
; GENERAL INFORMATION:
; APPLICANT: IDEXX LABORATORIES
; TITLE OF INVENTION: METHODS AND COMPOSITIONS CONCERNING
; TITLE OF INVENTION: CANINE INTERLEUKIN 5
; FILE REFERENCE: 0360400170OUS00
; CURRENT APPLICATION NUMBER: US/09/371,615A
; CURRENT FILING DATE: 1999-08-10
; NUMBER OF SEQ ID NOS: 8
; SOFTWARE: FastSEQ for Windows Version 3.0
;
; SEQ ID NO 1
; LENGTH: 405
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-371-615A-1

Query Match   8.8%;   Score 145.8; DB 4;   Length 405;
Best Local Similarity 92.7%;   Pred. No. 7.6e-25;
Matches 153; Conservative   0; Mismatches 12;   Indels   0; Gaps   0;

Qy   27 ATGAGAATGCTTCTGAATTTGAGTTTGGCTACGTCTTGGGGGTCTGCCTATGTTGGCCTTT 86
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 ATGAGAATGCTTCTGAATTTGAGTTTGGCTACGTCTTGGGGGTCTGCCTATGTTGGCCTTT 60

Qy   87 GCTGTGAAAAATCCCATGAATAGACTGGTCGGCGAGAGACCTGACACTGCTCTTCCACTCAT 146
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTGAAAAATCCCATGAATAGACTGGTCGGCGAGAGACCTTGACACTGCTCTGCTCCACTCAT 120

Qy   147 CGAACTTGGCTGCGTATAGGCGATGGGGTAATTTCTTTTTGATTCCT 191
         |||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCT 165

RESULT 13
US-09-322-409-85
; Sequence 85, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 85
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(345)
US-09-322-409-85

Query Match   7.9%;   Score 131.6; DB 4;   Length 345;
Best Local Similarity 97.1%;   Pred. No. 1.6e-21;
Matches 134; Conservative   0; Mismatches 4;   Indels   0; Gaps   0;

Qy 1274 AGCACACAAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTG 1333
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   119 ATCACCAAACTGTGCCATTAAAGAAGAGTTTTTCAGGGTATAGACACCATTGAAGAACCAAACTG 178

Qy 1274 AGCACCAAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTG 1333
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   227 ATCACCAAACTGTGCCATTAAAGAAGAGTTTTTCAGGGTATAGACACCATTGAAGAACCAAACTG 168

Qy 1334 AGCGCCAAAAAAGTAAGTT 1393
         |||||||||||||||||||
Db   179 CCCCACCGGGAGGCGAGCCTGTGGGATAAACTATTCCAAAAACTATTGTCTTTAATAAAAGAACAACATAG 238

Qy 1394 AGCGCCAAAAAAGTAAGTT 1411
         ||||||||| ||| |
Db   239 AGCGCCAAAAAAAAGGT 256

RESULT 14
US-09-322-409-87/c
; Sequence 87, Application US/09322409
; Patent No. 6471957
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1
; CURRENT APPLICATION NUMBER: US/09/322,409
; CURRENT FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 154
; SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 87
; LENGTH: 345
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-322-409-87

Query Match   7.9%;   Score 131.6; DB 4;   Length 345;
Best Local Similarity 97.1%;   Pred. No. 1.6e-21;
Matches 134; Conservative   0; Mismatches 4;   Indels   0; Gaps   0;

Qy 1274 AGCACCAAACTGTGCATTAAAGAAGAGTTTTTCAGGGTATAGACACATTGAAGAACCAAACTG 1333
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   227 ATCACCAAACTGTGCCATTAAAGAAGAGTTTTTCAGGGTATAGACACCATTGAAGAACCAAACTG 168

Qy 1334 CCCACGGGGGAGGCGTGTGGATAAACTA 1393
         ||||||||||||||||||||||||||||
Db   167 CCCACGGGGGAGGCGTGTGGATAAACTATTCCAAAAACTATTGTCTTTAATAAAAGAACAACATAG 108

Qy 1394 AGCGCCAAAAAAGTAAGTT 1411
         ||||||||| ||| |
Db   107 AGCGCCAAAAAAAAGGT 90

RESULT 15
US-09-451-527-85
; Sequence 85, Application US/09451527
; Patent No. 642403
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/09/451,527
; CURRENT FILING DATE: 1999-12-01
; EARLIER APPLICATION NUMBER: 09/322,409
; EARLIER FILING DATE: 1999-05-28
; EARLIER APPLICATION NUMBER: 60/087,306
; EARLIER FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
;
; SEQ ID NO 85
; LENGTH: 345
; TYPE: DNA

```
;  ORGANISM: Canis familiaris
;  FEATURE:
;  NAME/KEY: CDS
;  LOCATION: (1)..(345)
US-09-451-527-85

Query Match    7.9%;   Score 131.6;  DB 4;   Length 345;
Best Local Similarity   97.1%;   Pred. No. 1.6e-21;
Matches  134;   Conservative   0;   Mismatches   4;   Indels   0;   Gaps   0;

Qy  1274  AGCACCAACTGTGCATTAAAGAAAGTTTTTCAGGGGTATAGACACATTGAGAGAACCAAACTG 1333
          |||||||||||||||||||||||| ||||||||||| ||||||||||||||||||||||||||
Db  119   ATCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTGAGAGAACCAAACTG 178

Qy  1334  CCCACGGGGGAGGGCTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAG 1393
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  179   CCCACGGGGGAGGGCTGGATAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAG 238

Qy  1394  AGCGGCCAAAAAGTAAGTT 1411
          |||||||||||| |||
Db  239   AGCGGCCAAAAAAAAGGT 256

Search completed: August 7, 2005, 18:43:12
Job time : 340.649 secs
```

OM nucleic - nucleic search, using sw model

GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

Run on: August 7, 2005, 18:32:58 ; Search time 7988.1 Seconds
                 (without alignments)
                 10057.309 Million cell updates/sec

Title: US-10-787-382-18
Perfect score: 1658
Sequence: 1 aggcaaacactgaacattc.........gtagtggaagatttggaga 1658

Scoring table: IDENTITY NUC
                 Gapop 10.0 , Gapext 1.0

Searched: 4708233 seqs, 2422607955 residues
Total number of hits satisfying chosen parameters: 9416466
Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
                 Maximum Match 100%
                 Listing first 45 summaries

Database :   GenEmbl:*
                 1: gb_ba:*
                 2: gb_htg:*
                 3: gb_in:*
                 4: gb_om:*
                 5: gb_ov:*
                 6: gb_pat:*
                 7: gb_ph:*
                 8: gb_pl:*
                 9: gb_pr:*
                 10: gb_ro:*
                 11: gb_sts:*
                 12: gb_sy:*
                 13: gb_un:*
                 14: gb_vi:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

	Result No.	Score	Query Match %	Length	DB	ID	Description
	1	1658	100.0	1658	4	AF331920	AF331920 Canis fam
	2	634.6	38.3	3241	9	HUMIL5A	J02971 Human eosin
	3	634.6	38.3	5186	9	AF353265	AF353265 Homo sapi
	4	634.6	38.3	51186	9	AC004042	AC004042 Homo sapi
c	5	634.6	38.3	160042	9	AC079320	AC079320 Homo sapi
c	6	626.8	37.8	169385	9	AC116366	AC116366 Homo sapi
c	7	626.8	37.8	157168	2	AC150628	AC150628 Papio anu
	8	600.6	36.2	3230	6	AR136275	AR136275 Sequence
	9	600.6	36.2	3230	6	BD247730	BD247730 Antisense
	10	600.6	36.2	3230	6	E01640	E01640 gene for hu
	11	600.6	36.2	3230	6	AR364536	AR364536 H.sapiens g
	12	600.6	36.2	3230	9	X12706	X12706 H.sapiens g
	13	600.6	36.1	3230	9	HUMIL5	J03478 Human inter
	14	599	36.1	3230	9	E13592	E13592 gDNA encodi
	15	490.6	29.6	3507	9	HUM21DC942	L48478 Homo sapien
c	16	461.2	27.8	210242	2	AC151015	AC151015 Callithri
c	17	362.2	21.8	150124	2	AC148886	AC148886 Otolemur
c	18	362.2	21.8	167036	2	AC148855	AC148855 Otolemur
	19	347.4	21.0	1140	4	U17052	U17052 Ovis aries
	20	347.2	20.9	197131	4	AC149665	AC149665 Bos tauru
	21	272.6	16.4	700	6	AX182851	AX182851 Sequence
	22	245.2	14.8	450	6	U17053	U17053 Ovis aries
	23	221.6	13.4	700	6	AX182853	AX182853 Sequence
	24	216	13.0	700	6	AX182850	AX182850 Sequence
	25	215.4	13.0	700	6	AX182852	AX182852 Sequence
	26	205.2	12.4	1395	6	A21910	A21910 partial gen
	27	171.8	10.4	610	4	AF331919	AF331919 Canis fam
	28	171.8	10.4	610	6	BD211558	BD211558 Canine an
	29	171.8	10.4	610	6	BD211559	BD211559 Canine an
	30	171.8	10.4	700	6	AR241536	AR241536 Sequence
	31	171.8	10.4	610	6	AR241537	AR241537 Sequence
	32	171.8	10.4	610	6	AR254492	AR254492 Sequence
	33	171.8	10.4	610	6	AR254493	AR254493 Sequence
	34	163	9.8	3710	9	L48477	L48477 Homo sapien
	35	150.6	9.1	5397	6	AX345946	AX345946 Sequence
	36	149.4	9.0	838	4	AF025436	AF025436 Felis cat
	37	145.8	8.8	402	6	BD211560	BD211560 Canine an
	38	145.8	8.8	402	6	BD211561	BD211561 Canine an
	39	145.8	8.8	402	6	AR241538	AR241538 Sequence
c	40	145.8	8.8	402	6	AR241539	AR241539 Sequence
c	41	145.8	8.8	402	6	AR254494	AR254494 Sequence
c	42	145.8	8.8	402	6	AR254495	AR254495 Sequence
c	43	145.8	8.8	405	6	AR300436	AR300436 Sequence
	44	145.8	8.8	405	6	AX083939	AX083939 Sequence
	45	138.2	8.3	520	4	OAU35038	U35038 Ovis aries

ALIGNMENTS

RESULT 1
AF331920

```
LOCUS       AF331920                1658 bp    DNA     linear   MAM 04-OCT-2001
DEFINITION  Canis familiaris interleukin-5 gene, complete cds.
ACCESSION   AF331920
VERSION     AF331920.1  GI:15919182
KEYWORDS    .
SOURCE      Canis familiaris (dog)
  ORGANISM  Canis familiaris
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Laurasiatheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1  (bases 1 to 1658)
  AUTHORS   Yang,S., Sellins,K.S., Weber,E. and McCall,C.
  TITLE     Canine interleukin-5: molecular characterization of the gene and
            expression of biologically active recombinant protein
  JOURNAL   J. Interferon Cytokine Res. 21 (6), 361-367 (2001)
  MEDLINE   21334408
  PUBMED    11440633
REFERENCE   2  (bases 1 to 1658)
  AUTHORS   Yang,S.
  TITLE     Direct Submission
  JOURNAL   Submitted (22-DEC-2000) Immunology, Heska Corporation, 1613
            Prospect Parkway, Ft Collins, CO 80525, USA
FEATURES             Location/Qualifiers
     source          1..1658
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9615"
     mRNA            join(1..170,374..406,1276..1276,1404,1523..1658)
                     /product="interleukin-5"
     5'UTR           1..26
     CDS             join(27..170,374..406,1276..1404,1523..1621)
                     /note="IL-5"
                     /codon_start=1
                     /product="interleukin-5"
                     /protein_id="AAL10716.1"
                     /db_xref="GI:15919183"
                     /translation="MRMLLNLSLLALGAAYVSAFAVENPMNRLVAETLTLLSTHRTWL
                     IGDGNLMIPTPENKHQLCIKEVFQGIDTLKNQTAHGEAVDKLFQNLSLIKEHIERQK
                     KRCAGRWRVTKFLDYLQVFLGVINTEWTPES"
     3'UTR           1622..1658
ORIGIN
```

Query Match   100.0%; Score 1658; DB 4; Length 1658;
Best Local Similarity   100.0%; Pred. No. 3.9e-290;
Matches 1658; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

```
Qy      1 AGGGAAAACACTGAACATTCAGAGCTATAGAAGATGCTTCTGAAATTGAGTTTGCTAGCTC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 AGGGAAAACACTGAACATTCAGAGCTATAGAAGATGCTTCTGAAATTGAGTTTGCTAGCTC 60

Qy     61 TTGGGGGCTGCCTATGTTTTCTGCCTTTGCTCGTAGAAAATCCATGAATGAATAGACTGGT 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 TTGGGGGCTGCCTATGTTTTCTGCCTTTGCTCGTAGAAAATCCATGAATGAATAGACTGGTGGGCAG 120

Qy    121 AGACCTTGACACTGCTCTCCAACTCATCGAACTTGGCTGATAGGCGGATGGGGTAATTTCT 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 AGACCTTGACACTGCTCTCCAACTCATCGAACTTGGCTGATAGGCGGATGGGGTAATTTCT 180

Qy    181 TTTTGATTCCTACAGTGTCTTTAAAATGCATGGGTAATTGGTGGTGGGCTAGTTTTTTAAA 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 TTTTGATTCCTACAGTGTCTTTAAAATGCATGGGTAATTGGTGGTGGGCTAGTTTTTTAAA 240

Qy    241 GATCCATTATCAATAATGAAGTAATGAGTGTTAATATAATATATATAAATAATGTAACCATGTTAC 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 GATCCATTATCAATAATGAAGTAATGAGTGTTAATATAATATATATAAATAATGTAACCATGTTAC 300

Qy    301 TCAGAAGAATTATATTATGAACCTTACACAATACATAATTAAAAATGAATGTGTTTC 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 TCAGAAGAATTATATTATGAACCTTACACAATACATAATTAAAAATGAATGTGTTTC 360

Qy    361 CTTTCTTTTTCAGAACCTGAATGTTCCTACTCCCTGAAAAATGTAAGTAAGTAAAATTAT 420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    361 CTTTCTTTTTCAGAACCTGAATGTTCCTACTCCCTGAAAAATGTAAGTAAGTAAAATTAT 420

Qy    421 GATTTGATAAAATGATTACATGAATCAGTTCATTTCATAATTTCATAATTTCAGTTAA 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    421 GATTTGATAAAATGATTACATGAATCAGTTCATTTCATAATTTCATAATTTCAGTTAA 480

Qy    481 CATTGGGATGATTTAATTTTATCTATTTGTTTTATGTTTATGTGGCGGATGTAAAATTATGTGC 540
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    481 CATTGGGATGATTTAATTTTATCTATTTGTTTTATGTTTATGTGGCGGATGTAAAATTATGTGC 540

Qy    541 TTATGAATAATTAGGAATGGGTGTTAGGAATGCCTCACAATATTAAGGTAGAATCCATTAAG 600
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    541 TTATGAATAATTAGGAATGGGTGTTAGGAATGCCTCTCACAATATTAAGGTAGAATCCATTAAG 600

Qy    601 CAAGTGGATCAGGCCCTTTTTGGATGTTGTCAGTTCGTTCTCCATCTCAAAGAGGCCTCGTGTCA 660
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    601 CAAGTGGATCAGGCCCTTTTTGGATGTTGTCAGTTCGTTCTCCATCTCAAAGAGGCCTCGTGTCA 660

Qy    661 GGCATCTTTCCAAAAGAATTCCATATTGGGTCAGATACTTCCTAGGCTTCCATTCACC 720
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    661 GGCATCTTTCCAAAAGAATTCCATATTGGGTCAGAGATACTTCCTAGGCTTCCATTCACC 720

Qy    721 TCTGTGTTCGTTGGCTTTCCTCACCTCAAACGTTTTTCTGAAAGTACTAGCAACTGGCGTTAT 780
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    721 TCTGTGTTCGTTGGCTTTCCTCACCTCAAACGTTTTTCTGAAAGTACTAGCAACTGGGGTTAT 780

Qy    781 ATTTTTAGAATTATGGTCAGTAGCACTGAAAATATACAGTGAAGTCCTATATATTAATAGTC 840
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    781 ATTTTTAGAATTATGGTCAGTAGACACTGAAAATATACAGTGAAGTCCTATATATTAATAGTC 840

Qy    841 ACTTCCACATATTTAAATGATTTTAACTCTAATACATTACATCTGGAGTAGTC 900
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    841 ACTTCCACATATTTAAATGATTTTAACTCTAATACATTACATCTGGAGTAGTC 900

Qy    901 ATGGTCATTATTAAAAATGTTAAAAAATGTGATATCATTAAAAATAGAATAAAAATTACCA 960
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    901 ATGGTCATTATTAAAAATGTTAAAAAATGTGATATCATTAAAAATAGAATAAAAATTACCA 960

Qy    961 GCTAGAACTATACGAGGAAAATTCTGAGGTGAGGTAAATCAGTTGTATTGTATTATAC 1020
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    961 GCTAGAACTATACGAGGAAAATTCTGAGGTGAGGTAAATCAGTTGTATTGTATTATAC 1020

Qy   1021 CTCGTAAGCATTTATTTTCATTAATTCATTATTATATCATTTGTAACACTTCTCAGT 1080
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1021 CTCGTAAGCATTTATTTTCATTAATTCATTATTATATCATTTGTAACACTTCTCAGT 1080

Qy   1081 AATTATATAAAACATCATTTACTTATGGTAATTATAGCTTAGTATAAGGTGGTTTCCCACC 1140
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1081 AATTATATAAAACATCATTTACTTATGGTAATTATAGCTTAGTATAAGGTGGTTTCCCACC 1140

Qy   1141 TGGAAAAGACACAACTAAAAAACCTCTTGGGAGAAGGGAACTTGTGTTAAAACCCCACAAAAC 1200
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1141 TGGAAAAGACACAACTAAAAAACCTCTTGGGAGAAGGGAACTTGTGTTAAAACCCCACAAAAC 1200

Qy   1201 AAAGTCTAACTTTTTTGGACCAAATTTTATGCCTTGTTTTGATGAATTATTTTTTAAA 1260
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1201 AAAGTCTAACTTTTTTGGACCAAATTTTATGCCTTGTTTTGATGAATTATTTTTTAAA 1260

Qy   1261 ATCTTCCTTCATTAGACCAACTGTGCATTAAAGAAGTTTTTCAGGGTGTATAGACACATTG 1320
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1261 ATCTTCCTTCATTAGACCAACTGTGCATTAAAGAAGTTTTTCAGGGTGTATAGACACATTG 1320

Qy   1321 AAGAACCAAACTGCCCACACGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATA 1380
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1321 AAGAACCAAACTGCCCACACGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAATA 1380

Qy   1381 AAAGAACACATAGAGCGGCCAAAAAGTAAGTAAAGACATTGGCAAAAACTTAAGTATAT 1440
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1381 AAAGAACACATAGAGCGGCCAAAAAGTAAGTAAAGACATTGGCAAAAACTTAAGTATAT 1440

Qy   1441 TTGTCTGACTCTGCCCTGTTTTTTTTTTTTTTTTACAAGAATTGACAGTTCCTACAAT 1500
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1441 TTGTCTGACTCTGCCCTGTTTTTTTTTTTTTTTTACAAGAATTGACAGTTCCTACAAT 1500

Qy   1501 ATCTCCTCTGTTCTTTTTAACAGAAAAGGTGTGCAGAGAAAGAGATGACAAAGTT 1560
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1501 ATCTCCTCTGTTCTTTTTAACAGAAAAGGTGTGCAGAGAAAGAGATGACAAAGTT 1560

Qy   1561 CCTAGACTACCTGCAAGTATTCTTGGTGTAATAAACACCGGAAGTGACACCGGAAAGTTG 1620
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1561 CCTAGACTACCTGCAAGTATTCTTGGTGTAATAAACACCGGAAGTGACACCGGAAAGTTG 1620

Qy   1621 AGAACAAAACCGGCCTTATTGTGTAGTGGGAAGATTTTGGGAGA 1658
          ||||||||||||||||||||||||||||||||||||||||||||
Db   1621 AGAACAAAACCGGCCTTATTGTGTAGTGGGAAGATTTTGGGAGA 1658
```

RESULT 2
HUMIL5A
LOCUS   HUMIL5A   3241 bp   DNA   linear   PRI 29-APR-1996
DEFINITION Human eosinophil differentiation factor (interleukin 5) gene,
            complete cds.
ACCESSION   J02971
VERSION   J02971.1 GI:186340
KEYWORDS   eosinophil differentiation factor; interleukin 5.
SOURCE   Homo sapiens (human)
  ORGANISM Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 3241)
  AUTHORS   Campbell,H.D., Tucker,W.Q., Hort,Y., Martinson,M.E., Mayo,G.,
            Clutterbuck,E.J., Sanderson,C.J. and Young,I.G.
  TITLE   Molecular cloning, nucleotide sequence, and expression of the gene
            encoding human eosinophil differentiation factor (interleukin 5)
  JOURNAL   Proc. Natl. Acad. Sci. U.S.A. 84 (19), 6629-6633 (1987)
  MEDLINE   8801614S
  PUBMED   3498940
COMMENT   Original source text: Homo sapiens (clone: beta-EDFH-1.) (clone
            library: lambda-EDFH-1) DNA.
            Draft entry and computer-readable sequence for [1] kindly provided
            by H.D.Campbell, 09-SEP-1987.
FEATURES   Location/Qualifiers
     source   1..3241
                     /organism="Homo sapiens"
                     /mol_type="genomic DNA"

```
gene          /db_xref="taxon:9606"
              /map="5q23-q31"
              /clone="beta-EDFH-1."
              /clone_lib="lambda-EDFH-1"
              508..2586
exon          508..695
              /gene="IL5"
              508..695
gene          /gene="IL5"
              508..2586
CDS           /gene="IL5"
              /note="interleukin 5 precursor; G00-120-097"
              /number=1
              join(552..695,904..936,1887..2015,2121..2219)
              /gene="IL5"
              /db_xref=GI:386823"
              /db_xref=GDB:G00-120-097"
              /protein_id="AAA98620.1"
              /product="interleukin 5"
              /codon_start=1
              /note="precursor"
              /translation="MRMLLHISLLALGAAYVYAIPTEIPTSALVKETLALLSTHRTLL
              IANETLRIPVPVHKNHQLCTEEIFQGIGTLESQTVQGGTVERLFKNLSLIKKYIDGQK
              KKCGEERRRVNQFLDYLQEFLGVNMTEWIIES"
sig_peptide   552..608
              /gene="IL5"
mat_peptide   join(609..695,904..936,1887..2015,2121..2216)
              /gene="IL5"
              /product="interleukin 5"
              /note="G00-120-097"
intron        696..903
              /gene="IL5"
              /note="G00-120-097"
              /number=1
exon          904..936
              /gene="IL5"
              /note="G00-120-097"
              /number=2
intron        937..1886
              /gene="IL5"
              /note="G00-120-097"
              /number=2
exon          1887..2015
              /gene="IL5"
              /note="G00-120-097"
              /number=3
intron        2016..2120
              /gene="IL5"
              /note="G00-120-097"
              /number=3
exon          2121..2586
              /gene="IL5"
              /note="G00-120-097"
              /number=4
ORIGIN
    1 bp upstream of BamHI site; chromosome 5q23.3-q32.
```

```
Query Match            38.3%;  Score 634.6;  DB 9;  Length 3241;
Best Local Similarity  68.6%;  Pred. No. 4.9e-105;
Matches 1226;  Conservative  0;  Mismatches 374;  Indels 187;  Gaps 18;

Qy        1 AGGCAAACACTGAACATTTCAGAGCTATGAGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
            ||||||||||||||||||||||||||||||||||| ||||||| ||||||||||||||||||
Db      526 AGGCAAAACGCAGAACGTTTCAGAGCCATGAGAGATGCTTCTGAATTTGAGTTTGCTAGCTC 585

Qy       61 TTGGGGCTGCCTATGTTTCTTGCCTTTGTGTAGAAAAATCCCATGAATGAGACTGGTGGCAG 120
            ||||||||||||| ||||| ||||||||||||||||||||||||||||||||||||||||||
Db      586 TTGGAGCTGCCTACGTGTATGCCATCCCCACACAGAAAATTCCCACAGAAGTCACATGGTGAAAG 645

Qy      121 AGACCTTGACACTGCTCTCCCACTCATCGAACTTGGGCTTGATAGGCCGATGGGGTAATTTTCT 180
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      646 AGACCTTGGCACTGCTTTCTACTCATCGAACCTCGCTGATAGCCATGAGGGTAATTCCT 705

Qy      181 TTTGATTCCTACAGTCTTGTAAAATGCATAGGGTAATTGGGTGGTGGGTGGCTAGTT------ 234
            |||||||||||||||||| ||||||||||||||||||||||||||||||||||||||
Db      706 TTATGAATTCCTACAGTCTGTAAAAGTGTATATATATTATTTGTGTACAATATGATGTTTTGAAGTGTATGTAT 765
```

```
Qy      235 -TTTAAAGATCCATTATCAATAATGAAGTAATGAGTGTTAATATATATTAATGGGTAACC 293
            |||||||||||| ||||||||||||||||||||||||||||||||
Db      766 ATATAGAGATCTGTTATAAATATAAATAATAAGATTCGAG-CACATTAGTACATTAAAATGAATG 824

Qy      294 ATGTTACTTACTGAAGAATTATTAATAAAGTTATGAAACCTTACAATACATTAAAATGATTG 353
            ||||||||||||||| ||||||| |||||||||||||||||||||||||||||||
Db      825 ACATCACCAGCAAACATTCTTGTTAAAAAGTTATGGGGTCTCGTGTAGCATTAAAATGATTG 884

Qy      354 TTGTTTCCTTTTTCTTTTTCAGAACCTGATGATTCCTACTCCTGAAAAATAAAAATGTAACTT 413
            |||||||||||| ||| ||||||||||||||||||||||||||||
Db      885 -TATTTTCCTTTTCTCTCTCCAGACTCTGAGGAT TCCTGTACATTAAAAAATGTAAGTT 943

Qy      414 AAATTATGATTTGATAAAAATGATTACTACATGAGAATCAGT----TTCATATTTTAAGCTATAAA 469
            |||||||||||||| ||||||||||||||||||||||||||
Db      944 AAATTATGATTCAGTAAAAAATGGGCATGAATAAGTAAGTAAAATTCCTGTTTTAAGCTGTAAA 1003

Qy      470 GTATCAGTTAACATTGGGATGATTAATTTATTTATTCTATTTTGTTTTTGTTTTGTCGGGGATGT 529
            |||||| || || |||||||||| ||| ||||||||||| || ||||
Db     1004 TCATTCAGTTATCATTGGAATACTAATTAATTTTTCATATTTTGTTTTTGTTTTCATATAGGGTGGCTGT 1063

Qy      530 AAAT-TATGTGCTTATGGAAATAGGAATAGTGTTAGGAAATGGCTCTACACAATTTAAGTA 588
            ||||                        |||||||||||||||||||||
Db     1064 GAATGTCTGTACTTATATAATATATGAGGAATGACTTT-----------TTATCAAGTA 1108

Qy      589 GAATCCATTAAGCAAGTGGGATCCAGGCCCCTTTTTGGATTGTGTCAGTTCTCCATCTCAAAG 648
            |||||| ||||||||||||| ||||||||||| |||||||||||||||||||
Db     1109 GAATCCTTAAACAAGTGGATTAGGCTCTTTTGGTAGTTGTTAAGT-TGCCTCCCAAAG 1167

Qy      649 AGCCTCGTGTCAGGCATTCTTCCAAAAGAATTCCATATTGGGGTCAGAGATACTTCCTAG 708
            ||||||| ||||| ||||||||||||||||||||||||||||||
Db     1168 AGGATCCGTGTCAGGGATTCTTCCAGAGGAATCCCACACTGAGTGAGGAGGTGGCTGCTAG 1227

Qy      709 GCTCCATTCACCTCTGTCGTTGGCTTTCCTCACCTCAACGTTTTTTCTGAAAGTACTACTACA 768
            ||| |||||||||||| ||||||||||||||||||||| | |||
Db     1228 TCTCCCGTGCCAGTTCTGAC------TCTTTCTCACTCTAAGTGTTTTCTGAAAGTATTAGCA 1282

Qy      769 ACTTGGGGGTTATATTTTTAGAATTATGGTCAGTGAGACATGAAAATATCAGTGTCCT 828
            |||||||| ||||||||||||||||||||||||||||||||||||||||
Db     1283 ACTCAGAATTAATAATTATTTTTAGAGCCATGAAATGTTTTACTCTAACATCAAAATGCC- 1341

Qy      829 ATATTAATAGTGCTCACTTCCACATATTTAATTAAAATGATTTTTAACTGTAGTTCTAAAATAGA 888
            ||| |||||||||||| || |||||||| ||||||||||
Db     1342 -CTATATTAATGTCAGTAAGTTAAAATATTATGACTATATGATGGTGTTGTATGCA 1400

Qy      889 CTGGGAGTATGTCATGGGTCATAATTTAAAAATGTTAAAAATGTGATCATTAGTGTAAAATAGA 948
            |||||||||||| ||||||||||||||||||||||||||||
Db     1401 TTTGAAATATGTCCTGGGTCATAATTAAAAAGTAAAATATATAGTCTAAAATAGA 1460

Qy      949 ATAAAAATTACCAGCTAGAACTATACGAGGAAATTCTGAGGTGAGGTAAATCAGTAAGGCA 1008
            |||||            || ||||||||||||||||||||||||||||||
Db     1461 ATAAAAACTACCAGCTAGAACTGTTAGTAGAAACACAT--TGATATGAGTTTAATGTAA--- 1514

Qy     1009 GTTGTATATTATACCTCGTAAGCATTATTTATTTTTCATTTTATCATTTATATACATTTGTA 1068
            |||||||||| || ||||||||| ||| |||||||||||||||||
Db     1515 --TGCATTACACTTCCAAAACATTTTTTTCCAGTTACATAATTAAAGTTATATCCTTTATA 1572

Qy     1069 ACACTTCTCAGTAATATATAAACATACAATTTAC-TTATTGGTAATTATTAGCTTAGTATAAG 1127
            |||| |||||||||| |||||||||||||||||||||||||||
Db     1573 AAACTCCTCAGTAATCATATAAGCTCATCTACTTTTTGAAATTTACTTAATATGTG 1632

Qy     1128 GTGGTTTCCCACCTGGAAAAGACACAAGTAAAAACCTCTTGGGAGGAAGGGAACTTGTGTA 1187
            |||||||||||||||||||||||||||||||||| ||||||||||||
Db     1633 GTGGTTTGTTGCCTAGAAA----ACAAACAAAACTCTTTGGAGAGAGGGAACTTCATGTA 1688

Qy     1188 AACCCCACAAAAACAAAGTCTAACTT--------------- 1213
            |||| |||||| ||||||
Db     1689 AATACCACAAAACAAAGCCTAACTTGTTGTGGACCAAAATGTTTTAATAAAITAIATTTTTAA 1748

Qy     1214 ----------- 1213
Db     1749 TTCGATGAATTAAAAAGTATATAATTATTGTACAATATGAIGTTTGAAGTATGTAT 1808
```

```
Qy   1214  --------------TTGGACCAAAATTTTATGCCTTCGTTTTTGATGAATTATATTTT  1256
                         ||||||||||||||||||||||||||||||||||||||||||||
Db   1809  ACATTGCAGAAATGACAATGGACCAAAATTTTATACCTTGTTCTTGATTATTTGCA-TTTT  1867

Qy   1257  TAAAATCTTCCTCATTTAGCACCAACTGTTGCATTAAAGAAGTTTTTCAGGGTATAGACAC  1316
                ||||||||||||||| |||||||||||||| |||||||||||||||||||||||||
Db   1868  AAAAAATTTTCCTCATTTAGCACCAACTGTGCCACTGAAAGAAATCTTTCAGGGAATAGGCAC  1927

Qy   1317  ATTGAAGAACCAAACTGCCCACACGGGGAGGGCTGGTGGATAAACTATTACCAAAACTTGTCTTTT  1376
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1928  ACTGGAGAGTCAAACTGTGCAAGGGGTACTGTGTGAAAGACTATTCAAAAACTTGTCCTT  1987

Qy   1377  AATAAAAAGAACACATAGAGGGCCAAAAAAGTAAGTTAAAGACATTTGGCAAAAACTTAAGT  1436
                ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1988  AATAAAGAAAATACATTGACGGGCCAAAAAAGTAAAGTTACACACATT----CAATGGAAGCT  2042

Qy   1437  ATATTTGTTCTGACTCTGCCTGTTTTTTTTTTTTTTTTTACAAGAATTGACAGTTTCCTA  1496
                ||||||||||||||||||||||||||||||            ||||||||||||||||
Db   2043  ATATTTGTTCTCGGCGTGTGCCCTATTTCTAT-----------GGAATTGACAGTTTCCTG  2088

Qy   1497  CAATATCT------CCTCTGTTCTTTTACAGAAAAAGGTGTGCAGGGAGAAAAGATGGGAGAG  1550
                |||||||      ||||||||||||||||||||||||||||||||||||||||||||
Db   2089  TAATACCTATTGTCATTTTCTTTTTTCACAGAAAAAGTGTGGACAAGAAGAAACCGAGAG  2148

Qy   1551  TGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAAACACCGAGTGGACAC  1610
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2149  TAAACCAATTCCTAGACTACCTGCAAGAGAGTTTCTTGGTGTAATGAACACACCGAGTGGATAA  2208

Qy   1611  CGGAAAGTTGGAACAAAACCCGGCTTATTGTGTAGTGGAAGATTTTGAG  1657
                ||||||||||||||||||||||||||||||||||||||||||||||||
Db   2209  TAGAAAGTTGAGACTAAACTGGTTTGTTGCAGCCAAAGATTTTGGAG  2255
```

```
RESULT 3
AF353265
LOCUS       AF353265                5186 bp    DNA     linear   PRI 20-APR-2001
DEFINITION  Homo sapiens interleukin 5 (IL5) gene, complete cds.
ACCESSION   AF353265
VERSION     AF353265.1  GI:13346490
KEYWORDS    .
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 5186)
  AUTHORS   Rieder,M.J., Carrington,D.P., Chung,M.-W., Lee,K.L., Poel,C.L.,
            Yi,Q. and Nickerson,D.A.
  TITLE     Direct Submission
  JOURNAL   Submitted (25-FEB-2001) Molecular Biotechnology, University of
            Washington, 1705 NE Pacific, Seattle, WA 98195, USA
COMMENT     To cite this work please use: SeattleSNPs, NHLBI Program for
            Genomic Applications, UW-FHCRC, Seattle, WA (URL:
            http://pga.mbt.washington.edu).
FEATURES             Location/Qualifiers
     source          1..5186
                     /organism="Homo sapiens"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9606"
     variation       122
                     /frequency="0.07"
                     /replace="t"
     variation       447
                     /frequency="0.01"
                     /replace="t"
     variation       593
                     /frequency="0.01"
                     /replace="a"
     variation       658
                     /frequency="0.16"
                     /replace="g"
     variation       660
                     /frequency="0.02"
                     /replace="a"
     repeat_region   722..993
                     /rpt_family="MLT1K"
                     /rpt_type=dispersed
     variation       929
                     /frequency="0.45"
                     /replace="c"
     variation       961
                     /frequency="0.01"
                     /replace="t"
     repeat_region   1032..1139
                     /rpt_family="MLT1K"
                     /rpt_type=dispersed
     variation       1062
                     /frequency="0.01"
                     /replace="t"
     gene            1631..3709
                     /gene="IL5"
     mRNA            join(1631..1818,2027..2059,3010..3138,3244..3709)
                     /gene="IL5"
                     /product="interleukin 5"
     CDS             join(1675..1818,2027..2059,3010..3138,3244..3342)
                     /gene="IL5"
                     /note="colony-stimulating factor, eosinophil"
                     /codon_start=1
                     /product="interleukin 5"
                     /protein_id="AAK19759.1"
                     /db_xref="GI:13346491"
                     /translation="MRMLLHLSLLALGAAYVYAIPTEIPTSALVKETLALLSTHRTLL
                     IANETLRIPVPVHKNHQLCTEEIFQGIGTLESQTVQGGTVERLFKNLSLIKKYIDGQK
                     KKGGEERRRVNQFLDYLQEFLGVMNTEWIIES"
     variation       1835
                     /gene="IL5"
                     /frequency="0.01"
                     /replace="c"
     variation       1963
                     /gene="IL5"
                     /frequency="0.01"
                     /replace="a"
     repeat_region   2204..2341
                     /rpt_family="L3"
                     /rpt_type=dispersed
     variation       2248
                     /gene="IL5"
                     /frequency="0.03"
                     /replace="g"
     variation       2297
                     /gene="IL5"
                     /frequency="0.01"
                     /replace="a"
     variation       2718
                     /gene="IL5"
                     /frequency="0.11"
                     /replace="a"
     repeat_region   2864..2945
                     /rpt_family="L1MA8"
                     /rpt_type=dispersed
     variation       3116
                     /gene="IL5"
                     /frequency="0.01"
                     /replace="g"
     variation       3321
                     /gene="IL5"
                     /frequency="0.06"
                     /replace="a"
     repeat_region   3904..3991
                     /rpt_family="L2"
                     /rpt_type=dispersed
     variation       4421..4443
                     /gene="IL5"
                     /frequency="0.12"
                     /replace="-"
     repeat_region   4456..4518
                     /rpt_family="L2"
                     /rpt_type=dispersed
```

```
variation    4752
             /frequency="0.04"
             /replace="c"
repeat_region 4999..5023
             /rpt_family="L2"
             /rpt_type=dispersed
variation    4938
             /frequency="0.03"
             /replace="t"

ORIGIN

Query Match 38.3%;  Score 634.6;  DB 9;  Length 5186;
Best Local Similarity 68.6%;  Pred. No. 4.5e-105;
Matches 1226;  Conservative 0;  Mismatches 374;  Indels 187;  Gaps 18;
```

```
Qy      1 AGGCAAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTTCTGAAATTTGAGTTTGCTAGCTC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1649 AGGCAAAACGCAGAGAACGTTTCAGAGGATGGAGAAATGCTTCTTCTGCCATTTTTGAGTTTGCTAGCTC 1708

Qy     61 TTGGGGGCTGCCTAGTGTTCTGCCTTTGCTGTAGAAATCCCATGAATAGACTGAGTTGAGTTGGTGTA 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1709 TTGGAGCTGCCTACGTGTATGCCATCCCCACAGAAAATCCCACAGTGCATTGGTGAGAAAG 1768

Qy    121 AGACCCTTGACACTGCTCTCCACTCATCGAACTGGCTGATAGGCGATGGGGGGTAATTTTCT 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1769 AGACCTTGGGCACTGCTTTTCTACTCATCGCGAACCCAATGAGGGTAATTTTCT 1828

Qy    181 TTTTGATTCCTACAGTCTTTAAAATGCATGGGTAATTGGTGGTGGTGGGGCTAGTT----- 234
          |||||||||||||||||||||||||||||||||||||||||||||||
Db   1829 TTATGATTCCTACAGTCTGTAAAGTGCATAGGTAAACATCATTTGTGATTGGTTCCTTTACTAT 1888

Qy    235 -TTTAAAGATCCATTATCAATAAATGAAGTAGTAATCATTGTGTAGTAACC 293
          |||||||||||||||||||||||||||||||||||
Db   1889 ATATAGAGAATCTGTTATAAAATAATAAGATCTGAG-CACATTAGTACATGGTATATATG 1947

Qy    294 ATGTTACTCAGAAGAATTATATTATTACAATACAATTAAAAATGAATG 353
          ||||||||||||||||||||||||||||||||
Db   1948 ACATCACCAGCAAAACATTCTCGTTAAAAGTTATGAATGCTTGGTCGTGTAAAAATGATTG 2007

Qy    354 -TATTTCCTTTCTTTTTTCAGAACCCGATGAATTCCTACTCCTGAAAATAAAAATGTAAGTT 413
          |||||||||||||||||||||||||||
Db   2008 -TATTTCCTTTTCCTCTCGTTCCTGTTCCTGTTCCTACTACAATAAAATGTAAGTT 2066

Qy    414 AAATTATGATTTGATAAAAATGATTACACATGAATGAATCAGT----TTCATATTTTAGTATAAA 469
          ||||||||||||||||||||||||||||||||
Db   2067 AAATTATGATTCAGTGAATGGCATGAATAAGTAAAATTTCCTGGTTTTTTAAGCTGTAAA 2126

Qy    470 GTATCAGTTAACATTGGGATGATTTTATTTAATTTTGTTTTTTATGTGTTGTGCGGATGT 529
          |||||||||||||||||||||||||||||||||
Db   2127 TCATTAGTTATCATTGGAACTATTTTAATTCTATTGGTTTTCATATGGGGTGGCTGT 2186

Qy    530 AAAT-TATGTGCTTATTGAATATTAGGAATGGTGTTAGGAATGGCTCTACAGAATTGTAAGGTA 588
          ||||||||||||||||||||||||||||||||||||||||
Db   2187 GAATGTCTGTACTTATAATAATATGAGGAATGACTTT------- 2231

Qy    589 GAATCCATTAAGCACAAGTGGATCAGGCGCCCTTTTTTGATGTTGTTGTCTCCATTCTCAAAG 648
          |||||||||||||||||||||||||||||||||||||||
Db   2232 GAATCCTTTAAAACAAGTGGAATTAGGCTCTTTGGTGAATGTTGGTTAGTT-TGCCTCCCAAAG 2290

Qy    649 AGCCTCGTTGTCAGGCATTCTTCTTCCAAAAGAATTCCATATTGGGTCACAGAGATACTTCCTAG 708
          |||||||||||||||||||||||||||||||||||||||||
Db   2291 AGCATCGTGTGTCAGGGATTCTTTCCAGAAGGATTGGAGGTTGCCGTGCTAG 2350

Qy    709 GCTCCATTCACCTCTGTCGGTTGGCTTCTTCCTCCAAACGTTTCTCTGAAAAGTACTTAGCA 768
          ||||||||||||||||||||||||||||||||
Db   2351 TCTCCGTTGCCAGTTCCTGAC----TCTTTCTCACTCTACGTGTTTTCTGAAAGTAATTTAGCA 2405

Qy    769 ACTTGGGGGTTTATATTTTTAGAATTATGGTCAGTGACATGAAAATATACAGTGAAGTCCT 828
          |||||||||||||||||||||||||||||||||||||||
Db   2406 ACTCAGAATTATATTTTTAGAACCATGATCTAGACATTAAAAATATATACAAAATGCC- 2464

Qy    829 ATATTAATAGTCACTTCCACATATTTAAATGATTTTTAAACTCTAATGGAATCATATACAT 888
          ||||||||||||||||||||||||||||||||||||||||||
Db    ... 888
```

```
Db   2465 -CTATATTAATAATTTTCTGCACTACTTAAATAATTATGACTATATGATGGTGTTGTATGCA 2523
          ||||||||||||||||||||||||||||||||||||||||||||
Qy    889 CTGGAGTATGTCATGGTGTCATATTATTAAAATGTTAAAAATGTGATATCATTAGCTAGATAGA 948
Db   2524 TTTGAATATGTCCTGGTGTCATTAATTAAAATGTAAAAATATATAGTTTTATTAGTCTAAATATGTG 2583

Db   2584 ATAAAAACTACCAGCTAGAAGCTAGAAACAGAT--TGATATGGAGTTTAAATGTATAA--- 2637
          ||||||||||||||||||||||||||||||||||||||
Qy    949 ATAAAATTACCAGACTATACAGAGGAAAATTCTCAGGTCGATGGGTAAATCAGTAAGGCA 1008

Qy   1009 GTTGTAATTAATACCTCGTAAGCATTTTATTTTTTCATTAATCATTTCATTTATATATCATTTGTA 1068
          |||||||||||||||||||||||||||||||
Db   2638 --TGCATTACACTTCCAAAAACATTTTTTTCCAGTGACTTACATAATTTAAGTATATCCTTTTATA 2695

Qy   1069 ACACTTCTCAGTAATTATATTAAAACATCATTTAC-TTATGGTAATTAATTAAGTTAGTATGTG 1127
          |||||||||||||||||||||||||||||
Db   2696 AAACTCCTCAGTAAATCATATATAAGCTTCATCTACTTTTTTGAAATTTATTCTTAATATGTG 2755

Qy   1128 GTGGGTTTCCCACCTGAGAAAAAGACACAAGTAAAAAAACCTCTTGGGAGAAGGGGGAACTTGGTA 1187
          ||||||||||||||||||||||||||||||
Db   2756 GTGGTTTGTTGCCTAGAAA-----ACAAAACAAAAAAAAACTCTTTGGAGAAGGGGGAACTCATGTA 2811

Qy   1188 AACCCCACAAAAACAAAAGTCTAACTTT---------- 1213
          ||||||||||||||||||||||||
Db   2812 AATACCACAAAAACAAAAGCCTAACTTGTTGGGACCAAAAATTGTTTTTAATAAATATTTTTTAA 2871

Qy   1214 ------------------ 1213
Db   2872 TTGATGAATTAAAAAGTATATATTAAAATGTTATAACAATATGAGTGTTTGAAGTAGTAT 2931

Qy   1214 -------------------- 1213
Db   2932 ACATTGCAGAATGGACAAATGGACCAAATTTTATACCTTGTTGTCTTGATTATTTGCCA-TTTT 2990

Qy   1257 TAAAATCTTCCTCATTTAAACAGAAAAAGTGTGCATTAAAGAAGAGTTGTATAGACAC 1316
          |||||||||||||||||||||||||||||||
Db   2991 AAAAAATTTTCCTCATTTAGCACCAACTGTGCCACTGAGAAAAATCTTTGTCGGGAATAAGGCAC 3050

Qy   1317 ATTGAAGAACCAAAACTGCCCACGGGGGGAGGCCTGGGATAAACTATTCCAAAACTTGTCTTT 1376
          ||||||||||||||||||||||||||||||||
Db   3051 ACTGGGAGAGTCAAAACTGTGCAACTGTGGAAGGGTTACTGTGGAAGACTATTTCAAAAAACTTGTCCTT 3110

Qy   1377 AAATAAAAGAACACATAGAGCGCGCCAAAAAAGTAAGCTAAAAGACAATTGGCAAAAAACTTAAGT 1436
          ||||||||||||||||||||||||||||||||
Db   3111 AATAAAAGAAAATAACATTGACGGGCCAAAAAGTAAGTTACACACATT-----CAATGGAAGCT 3165

Qy   1437 ATATTTGTCTGACTCTGCCCTGTTTTTTTTTTTTTTTACAGAAGAATTGACAGTTTCCTA 1496
          |||||||||||||||||||||||||||||||
Db   3166 ATATTTTGTCTGGCTGTGCCCTATTTCTAT-------GGAATTGACAGTTTCCTG 3211

Qy   1497 CAATATCT------CCTCTGTTCTTTTTTAAACAGAAAAAGTGTGTGCAGGAGAGACATGGGAGAG 1550
          |||||||||||||||||||||||||||||
Db   3212 TAATACCTATTGTGTCATTTTTCTTTTTTCATCAGAAAAAGTGTGGGAAGAGAAAACGGGAGAG 3271

Qy   1551 TGACAAAGTTCCTTGACTACCTTGCCAAGTGTATTGTTCTTGGTAATAAAACACCGAGTCGGGGACAC 1610
          |||||||||||||||||||||||||||||||
Db   3272 TAAACCAATTCCTTAGACTTCCTTCGGTGTTAATGAACACCGAGTGGGATAA 3331

Qy   1611 CGGAAAGTTGAGAACAAACCGGCTTATTGTAGTGGAAGGAGATTTGGAG 1657
          |||||||||||||||||||||||||||||||
Db   3332 TAGAAAGTTGAGACTAAAACTGGTTTTGTTGCAGCCAAAGATTTTGGAG 3378
```

```
RESULT 4
AC004042
LOCUS        AC004042    57186 bp    DNA    linear    PRI 27-JAN-1998
DEFINITION   Homo sapiens chromosome 5, P1 clone 96c7, P1 5001 (LBNL H21),
             complete sequence.
ACCESSION    AC004042
VERSION      AC004042.1   GI:2811098
KEYWORDS     HTG.
SOURCE       Homo sapiens (human)
ORGANISM     Homo sapiens
```

```
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 57186)
AUTHORS     Connolly,K.S., Gunning,K.M., Davis,C.A., Kadner,K., Subramanian,S.,
            Miguel,T., Lewis,K.D., Fridlyand,J., Alcivare,D., Benke,J.A.,
            Bondoc,M., Bowen,E., Chiang,A., Critz,P., Jaklevic,M.A., Lindo,K.,
            Lindquist,K., Miller,C., Patel,S., Piscia,C., Riley,B.E.,
            Rojeski,H., Sarmiento,R., Yu,C., Montenegro,M., Moise,H.,
            Blazej,R., Flanagan,J., Stultz,J.L. and Martin,C.H.
TITLE       Sequencing of human chromosome 5
JOURNAL     Unpublished
REFERENCE   2  (bases 1 to 57186)
AUTHORS     Ricke,D.O. and Wagner,R.P.
TITLE       Large Scale Sequence Analysis and Annotation with the Sequence
            Comparison Analysis (SCAN) System
JOURNAL     Unpublished
REFERENCE   3  (bases 1 to 57186)
AUTHORS     Connolly,K.S., Gunning,K.M., Davis,C.A., Kadner,K., Subramanian,S.,
            Miguel,T., Lewis,K.D., Fridlyand,J., Alcivare,D., Benke,J.A.,
            Bondoc,M., Bowen,E., Chiang,A., Critz,P., Jaklevic,M.A., Lindo,K.,
            Lindquist,K., Miller,C., Patel,S., Piscia,C., Riley,B.E.,
            Rojeski,H., Sarmiento,R., Yu,C., Montenegro,M., Moise,H.,
            Blazej,R., Flanagan,J., Stultz,J.L. and Martin,C.H.
TITLE       Direct Submission
JOURNAL     Submitted (27-JAN-1998) Human Genome Center, DOE Joint Genome
            Institute, Lawrence Berkeley National Laboratory, MS 74-157,
            Berkeley, CA 94720, U.S.A.
COMMENT     Sequence submitted by:
            DOE Joint Genome Institute
            For further information about this sequence, including its location
            and relationship to other sequences, please visit the sequence
            archive Website (http://www-hgc.lbl.gov/sequence-archive.html) or
            send email to human@genome.lbl.gov.
FEATURES             Location/Qualifiers
     source          1..57186
                     /organism="Homo sapiens"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9606"
                     /chromosome="5"
                     /map="5q"
                     /clone="96c7"
                     /note="LBNL H21"
     repeat_region   444..789
                     /rpt_family="Alu"
     misc_feature    complement(1814..2027)
                     /note="RAD50 DNA repair protein exon"
     misc_feature    complement(2376..2565)
                     /note="RAD50 DNA repair protein exon"
     repeat_region   3051..3358
                     /rpt_family="Alu"
     repeat_region   3332..3355
                     /note="(A)24"
     repeat_region   3745..4088
                     /rpt_type=tandem
                     /rpt_unit="a"
     repeat_region   4052..4077
                     /note="(A)26"
     repeat_region   4421..4906
                     /rpt_family="Alu"
     repeat_region   5693..5833
                     /rpt_family="L1MC2"
     misc_feature    complement(5947..6110)
                     /note="RAD50 DNA repair protein exon"
     repeat_region   6424..8431
                     /rpt_family="THR"
     repeat_region   8340..8675
                     /rpt_family="LTR"
     repeat_region   complement(8707..8866)
                     /rpt_family="Alu"
     repeat_region   8902..8972
                     /rpt_family="MER42c"
```

```
     repeat_region   9074..9169
                     /rpt_family="MLT1"
     repeat_region   complement(9683..9749)
                     /rpt_family="L1"
     repeat_region   complement(9902..10047)
                     /rpt_family="MER42"
     repeat_region   complement(10144..10399)
                     /rpt_family="Alu"
     repeat_region   complement(10405..10504)
                     /rpt_family="MER42"
     repeat_region   10578..11496
                     /rpt_family="MER37"
     repeat_region   complement(11776..11858)
                     /rpt_family="L1"
     repeat_region   13497..13853
                     /rpt_family="Alu"
     repeat_region   complement(16528..16877)
                     /rpt_family="MSTa"
     repeat_region   complement(16880..18149)
                     /rpt_family="MSTAR"
     repeat_region   20334..20685
                     /rpt_family="Alu"
     repeat_region   21803..21828
                     /note="(GT)13"
     repeat_region   21955..22084
                     /rpt_type=tandem
                     /rpt_unit="gt"
     repeat_region   complement(24427..24942)
                     /rpt_type=tandem
                     /rpt_unit="t"
     misc_feature    complement(24427..24942)
                     /note="RAD50 DNA repair protein exon"
     repeat_region   23138..23161
                     /note="(T)24"
     repeat_region   complement(26029..26371)
                     /rpt_family="Alu"
     repeat_region   complement(26344..26639)
                     /rpt_family="L1"
     repeat_region   26643..26993
                     /rpt_family="L1"
     repeat_region   complement(27044..27444)
                     /rpt_family="MER1b"
     repeat_region   complement(27486..27822)
                     /rpt_family="L1"
     repeat_region   complement(27901..28289)
                     /rpt_family="Alu"
     repeat_region   27914..27934
                     /note="(T)21"
     repeat_region   28882..29133
                     /rpt_type=tandem
                     /rpt_unit="t"
     repeat_region   29138..29267
                     /rpt_family="MER42"
     repeat_region   complement(29562..29876)
                     /rpt_family="Alu"
     repeat_region   complement(30004..30524)
                     /rpt_family="Alu"
     repeat_region   31222..31550
                     /rpt_family="MER6"
     repeat_region   32507..32873
                     /rpt_family="AluSc"
     repeat_region   complement(32838..33402)
                     /rpt_family="Alu"
     repeat_region   complement(33623..34086)
                     /rpt_family="MER6"
     repeat_region   complement(34322..34724)
                     /rpt_family="Alu"
     repeat_region   /rpt_family="MER42a"
```

```
repeat_region    complement(34777..35145)
                 /rpt_family="Alu"
repeat_region    35248..35728
                 /rpt_family="L1MB3"
repeat_region    complement(35909..36503)
                 /rpt_family="Alu"
misc_feature     37847..38001
                 /note="Il-5 interleukin 5"
misc_feature     38231..38410
                 /note="Il-5 interleukin 5"
misc_feature     40501..41085
                 /note="Il-5 interleukin 5"
repeat_region    complement(41662..41730)
                 /rpt_family="MIR2"
repeat_region    42632..42932
                 /rpt_family="Alu"
repeat_region    complement(43091..43399)
                 /rpt_family="Alu"
repeat_region    complement(43399..44192)
                 /rpt_family="Alu"
repeat_region    complement(43399..43764)
                 /rpt_family="Alu"
repeat_region    complement(43765..44244)
                 /rpt_family="Alu"
repeat_region    47706..48028
                 /rpt_family="L1"
repeat_region    complement(48727..48852)
                 /rpt_family="Alu"
repeat_region    49095..49467
                 /rpt_family="Alu"
repeat_region    49535..49746
                 /rpt_family="Alu"
repeat_region    50408..50709
                 /rpt_family="MER20"
repeat_region    complement(50977..51323)
                 /rpt_family="L1"
repeat_region    51472..51783
                 /rpt_family="Alu"
repeat_region    52853..52927
                 /rpt_family="Alu"
repeat_region    complement(53074..53167)
                 /rpt_family="MIR"
repeat_region    complement(53743..54078)
                 /rpt_family="Alu"
repeat_region    complement(55850..56184)
                 /rpt_family="Alu"


Query Match      38.3%;  Score 634.6;  DB 9;  Length 57186;
Best Local Similarity  68.6%;  Pred. No. 2.9e-105;
Matches 1226;  Conservative 0;  Mismatches 374;  Indels 187;  Gaps 18;


Qy      1 AGGCAAAACACTGAACATTCAGAGCTATGAGGAATGCTTCTGAAATTTGAGTTTGCTAGCTC  60
Db  38370 AGGCAAAACGCAGAAACGTTTCAGAGCCATGAGGGATGCTTCTGAAATTTGAGTTTGCTAGCTC  38429

Qy     61 TTGGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAAATCCATGATGAATAGACTGGTGGGCAG  120
Db  38430 TTGGAGCTGCCTACGTGTGTATGCCATCCCCACAAGAAATTCCCACAAGTGCATTGGTGAAAG  38489

Qy    121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGGGTAATTTCT  180
Db  38490 AGACCTTTGGGCACTGCTTTCTACTCATCGAACTTGGTTAATTTCT  38549

Qy    181 TTTTTGATTCCTACAGTCTTTAAAAATGCATGGGTAGTTGGGTGGTGGGCTGCTGTT----  234
Db  38550 TTATGATTCCTACAGTCTGTAAAGTATATATGATGTTTGAGTTATGT  38609

Qy    235 -TTTAAAGATCCATTATATCAATAATGAGTAATGAGTGTTAATTAACATTTGTGATTGGTAACC  293
Db  38610 ATATAGAGATCTGTTATAAAATAATAAAGAATTCTGAG-CACATTAGTACATGGGTGATTAAACT  38668

Qy    294 ATGTTACTCAGAAGAATTATTATTAAAAAAGTTATGAACCTTACAAATACATTAAAAATGAATG  353
Db  38669 ACATCACCAGCAAACATTCTGTTAAAAGTTATGAATGCTGGTGTGCTGTAAAAATGATTG  38728

Qy    354 TTGGTTCCTTTCTTTTTTCTTTGAACCTGATGAATTCCTACTTCCTGAAAATAAAAATGTAAGTT  413
Db  38729 -TATTTCCTTTCCTCCCAGGACTCTGAATTCCTGTTTCCGTTACAATAAAATGTAAGTT  38787

Qy    414 AAATTATGATTTGATAAAAATGATTACATGACATCAGT----TTCATATTTTAAGCTATAAA  469
Db  38788 AAATTATGATTCAGTGAAAATGGCACAGAATAAGCTAGAATTTCCTGTTTTTAGGCTGTAAA  38847

Qy    470 GTATCAGTTAACATTGGGAGATTTAATTTCTATTTGTTTTTATGTGTCGGGGATGT  529
Db  38848 TCATTAGTTATCATTGGAACTAATTTAATTTCTATAATTTTGTTTTCATATGGGTGGT  38907

Qy    530 AAAT-TATGTGCTTATGAATATTAGGAATGGTGTTAGGAATGGCTCTACAATATTAAGTA  588
Db  38908 GAAATGTCGTGTACTTATAAAATATGAGGGAATGACTTT---TTATCAAGTA  38952

Qy    589 GAAATCCATTAAGCAACTGGATCAGGCGCCCTTTTTTTTGGATGTTTCTCCATCTCAAAG  648
Db  38953 GAAATCCTTTAAACAAGTGGATTAGGCTCCTTTGGGTGATTTTGTTAGTT--TGCCTCCCAAAG  39011

Qy    649 AGCCTCCGTGTCAGGCCAATTCTTTCCAAAAGGAATTCCATATTGGGGTCAGAGATACTTCCTAG  708
Db  39012 AGCATCGTGTCAGGGAATTCTTTCCAGAGGAATTCCACACTGAGTGAGAAGTCGTGCTAG  39071

Qy    709 GCTCCATTCACCTCTGTTCGGTTGGCTTTCCTCACCTCAAAGTTTTTCTGAAAGTTCTACTAGCA  768
Db  39072 TCTCCGTGCTGCAGTTCTGAC-----TCTTCTCACTCTAAGGTGTTTCGAAAGTTATTAGCA  39126

Qy    769 ACTTGGGGTTTATATTTTTAGAAATTAATGGTCATGTGAGACATGACAATAGAGACAGTCCT  828
Db  39127 ACTCAGAATTATATTTTTAGAACCATCAGTACAGAACATTAAAATATATAAATGCC-  39185

Qy    829 ATATTAATAGTCACTTCCACATATTTAAAATGATTTTAAACTCTAAATGGAATCATATACAT  888
Db  39186 -CTATTAATAATTTCTGCATACTTCCCAAAACATTTTTTCAGTTACATAATTAAGTTATATCCTTTATA  39244

Qy    889 CTGGAGTATGTCATGGTCATTATTATTAAAAATGTTGATATCATTAGTGTAAATAGA  948
Db  39245 TTTGAATATGTCCCTGGTCATTATTAAAAATGTAAAAATATATAAGTCTAAAATAGA  39304

Qy    949 ATAAAAATTACCAGCTAGAAACTAATACCAGGAGAAATTCTGAGGTGGAGGTAAATCAGTAAGGCA  1008
Db  39305 ATAAAAACTACCAGCTAGAACTGTAGAAAACACAT--TGATATGAGTTTAATGTATAA----  39358

Qy   1009 GTTGTATTATACCTCGTAAGCATTTATTTCATTAATCATTTCATTTTATATCATTGTA  1068
Db  39359 --TGCATTACACTTCCAAAACATTTTTTTGTGGACCAAAAATGTTTTAAAATAATTTTTTAA  39416

Qy   1069 ACACTTCTCAGTAATAATTATATAAAACATCATTTAC-TTAATGGTAATTATTAGCTTAGTATAAG  1127
Db  39417 AAACTCCCTAGTAATCATAATAAGCTTCATCTACTTTTTGAAAATTTATCCTTAAATACTG  39476

Qy   1128 GTGGGTTTCCCACCTGAAAAGAACAAAGTAAAAACCTTCTTCGGGAGAAGGGGAACTTGTGTA  1187
Db  39477 GTGGTTTTGTTGCTTGCAGTAA----ACAAACAAAAAACTCTTTGAGGAGGGGAACTCATGTA  39532

Qy   1188 AACCCCACAAAAACAAGTCTAACTTT-------  1213
Db  39533 AATACCACAAAAACAAAGCCTAACTTTGTTTTAAATAATTTTTTTAA  39592

Qy   1214 -------  1213
Db  39593 TTGATGAATTAAAAAGTATATATATTATTGTACAATATGAGTGTTTTGAAGTAGTAT  39652

Qy   1214 TTGGACCAAATTTTTATGCCTTGTTGTTTTGATGAATTAATTATATTTT  1256
Db  39653 ACATTGCAGAATGGACAATGGCACCAAATTTTTTATACCTTGTCTTGATTATTTGCA-TTTT  39711

Qy   1257 TAAAATCTTCCTCATTTAGCACCAACTGTGCATTAAAGAAGAGTTTTCAGGGTATAGCAC  1316
Db  39712 AAAAATTTTCCTCATTTAGCACCAACTGTGCACTGAGAGAATCTTTCAGGGAATAGGCAC  39771
```

```
Qy   1317 ATTGAAGAACCAAAACTGCCCACGGGGGAGGGCTGTGTGGATAAACTATTCCCAAAACTTGTCTTT 1376
          ||||||||||||||  |||||||||  ||||||| ||||||||||||| ||||||| |||||||||
Db  39772 ACTGGAGGAGTCAAAACTGTGCAAAGGGGGTACTGTGGCGAAAGACTATTCAAAAACTTGTCCTT 39831

Qy   1377 AATAAAAGAAGACACATTAGACGCGGCCAAAAAAGTAAGTTAAAGACATTTGGCAAAAACTTAAGT 1436
          ||||||||| ||| |||||| | ||||||||||||||||||||||||| ||||||||||||||||
Db  39832 AATAAAAGAAATACATTGACCGGCCAAAAAAGTAAGTTACACACATT----CAATGGAAGCT 39886

Qy   1437 ATATTTGTCTGAACTCTGCCCGTTTTTTTTTTTTTTTTTTTACAAGATTGACAGTTTCCTA 1496
          ||||||||||||||||||| |||||||||||||||||||||||||| |||||||||||||||
Db  39887 ATATTTGTCTGGCTGCTTGCCCTATTTCTAT------------GGAATTGACAGTTTCCTG 39932

Qy   1497 CAATATCT------CCTCTGTTCTTTTAACAGAAAAAGGTGGCAGCAGAAAGATGGAGAG 1550
          |||||||        |||||||||||||| |||| ||||||||||||||||||||||||
Db  39933 TAAATACCTATTGTCATTTTTCTTTTTTTCACAGAAAAGTGGAAGACACCGAGTGGATAA 39992

Qy   1551 TGACAAAAGTTCCTAGACTACCTGCCTAGTTTTTTTTTTTTTTTCTTGGTGTAATAAAAACACCGAGTGGACAC 1610
          |||||||||||||||||||||||||||| |||||||||||||||||||||||||||||||||||||||||
Db  39993 TAAACCAATTCCTAGACTACCTGCCTAGTTTTTTTTTTTTTTTCTTGGTGTAATAAAAACACCGAGTGGACAC 39992

Qy   1611 CGGAAAGTTGAGAACAAACCGGCCTTATTGTTAGTGGGAAGATTTGGAG 1657
          ||||||||||||||||||||||||||||||||||||||||||||||||
Db  40053 TAGAAAGTTGAGAACTAAACACGGTTTGTTGTTGCAGCCAAAAGATTTTGGAG 40099
```

RESULT 5

LOCUS   AC079320/c   160042 bp   DNA   linear   PRI 14-JUL-2002
DEFINITION Homo sapiens chromosome 5, clone RP11-729C24, complete sequence.
ACCESSION   AC079320
VERSION   AC079320.9 GI:21747557
KEYWORDS   HTG.
SOURCE   Homo sapiens (human)
  ORGANISM Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 160042)
  AUTHORS   Birren,B., Nusbaum,C. and Lander,E.
  TITLE   Unpublished
  JOURNAL   Unpublished
REFERENCE   2 (bases 1 to 160042)
  AUTHORS   Birren,B., Linton,L., Nusbaum,C., Lander,E., Abraham,H., Allen,N.,
            Anderson,S., Barna,N., Bastien,V., Beda,F., Boguslavkiy,L.,
            Bourkgalter,B., Brown,A., Burkett,G., Campopiano,A., Castle,A.,
            Choepel,Y., Colangelo,M., Collins,S., Dodge,S., Ferreira,P.,
            DeArellano,K., Dewar,K., Diaz,J.S., Dodge,S., Ferreira,P.,
            FitzHugh,W., Gage,D., Galagan,J., Gardyna,S., Ginde,S., Goyette,M.,
            Graham,L., Grand-Pierre,N., Hagos,B., Heaford,A., Horton,L.,
            Iliev,I., Johnson,R., Jones,C., Kann,L., Karatas,A., LaRocque,K.,
            Lamazares,R., Landers,T., Lehoczky,J., Levine,R., Lieu,C., Liu,G.,
            Macdonald,P., Marquis,N., McCarthy,M., McEwan,P., McKernan,K.,
            McPheeters,R., Meldrim,J., Meneus,L., Mihova,T., Mlenga,V.,
            Morrow,J., Murphy,T., Naylor,J., Norman,C.H., O'Connor,T.,
            O'Donnell,P., O'Neil,D., Oliver,T.M., Oliver,J., Peterson,K.,
            Pierre,N., Pisani,C., Pollara,V., Raymond,C., Rieback,M., Riley,R.,
            Rogov,P., Rothman,D., Roy,A., Santos,R., Schauer,S., Severy,P.,
            Sougnez,C., Spencer,B., Stange-Thomann,N., Stojanovic,N.,
            Strauss,N., Subramanian,A., Talamas,J., Tesfaye,S., Theodore,J.,
            Tirrell,A., Travers,M., Trigilio,J., Vassiliev,H., Viel,R., Vo,A.,
            Wilson,B., Wu,X., Wyman,D., Ye,W.J., Young,G., Zainoun,J.,
            Zimmer,A. and Zody,M.
  TITLE   Direct Submission
  JOURNAL   Submitted (27-AUG-2000) Whitehead Institute/MIT Center for Genome
            Research, 320 Charles Street, Cambridge, MA 02141, USA
REFERENCE   3 (bases 1 to 160042)
  AUTHORS   Birren,B., Linton,L., Nusbaum,C., Lander,E., Ali,A., Allen,N.,
            Anderson,S., Barna,N., Bastien,V., Boguslavkiy,L., Boukhgalter,B.,
            Brown,A., Camarata,J., Campopiano,A., Chang,J., Chazaro,B.,
            Choepel,Y., Colangelo,M., Collins,S., Collymore,A., Cook,A.,
            Cooke,P., DeArellano,K., Dewar,K., Diaz,J.S., Dodge,S., Faro,S.,
            Ferreira,P., FitzHugh,W., Gage,D., Galagan,J., Gardyna,S.,
            Ginde,S., Gord,S., Goyette,M., Graham,L., Grand-Pierre,N.,
            Hagos,B., Horton,L., Hulme,W., Iliev,I., Johnson,R., Jones,C.,
            Kamat,A., Karatas,A., Kells,C., Kolbe,L., LaRocque,K., Lamazares,R.,
            Landers,T., Lehoczky,J., Levine,R., Lieu,C., Liu,G., Maclean,C.,
            Macdonald,P., Major,J., Marquis,N., Matthews,C., McCarthy,M.,
            McEwan,P., McKernan,K., Meldrim,J., Meneus,L., Mihova,T.,
            Mlenga,V., Murphy,T., Naylor,J., Nguyen,C., Nicol,R., Norbu,T.,
            Norman,C.H., O'Connor,T., O'Donnell,P., O'Neil,D., Oliver,J.,
            Peterson,K., Phunkhang,P., Pierre,N., Pollara,V., Raymond,C.,
            Retta,R., Rieback,M., Riley,R., Rise,C., Rogov,P., Roman,C.,
            Rosetti,M., Roy,A., Santos,R., Schauer,S., Schupback,R., Seaman,S.,
            Severy,P., Spencer,B., Stange-Thomann,N., Stojanovic,N.,
            Strauss,N., Subramanian,A., Talamas,J., Tesfaye,S., Theodore,J.,
            Topham,K., Travers,M., Trigilio,J., Vassiliev,H.,
            Viel,R., Vo,A., Wilson,B., Wu,X., Wyman,D., Ye,W.J., Young,G.,
            Zainoun,J., Zembek,L., Zimmer,A. and Zody,M.
  TITLE   Direct Submission
  JOURNAL   Submitted (16-FEB-2002) Whitehead Institute/MIT Center for Genome
            Research, 320 Charles Street, Cambridge, MA 02141, USA
REFERENCE   4 (bases 1 to 160042)
  AUTHORS   Birren,B., Nusbaum,C., Lander,E., Ali,A., Allen,N., Anderson,S.,
            Barna,N., Bastien,V., Bloom,T., Boguslavkiy,L., Boukhgalter,B.,
            Camarata,J., Chang,J., Chazaro,B., Choepel,Y., Collymore,A.,
            Cook,A., Cooke,P., DeArellano,K., Dewar,K., Diaz,J.S., Dodge,S.,
            Faro,S., Ferreira,P., FitzGerald,M., Gage,D., Galagan,J.,
            Gardyna,S., Gord,S., Graham,L., Grand-Pierre,N., Hagos,B.,
            Horton,L., Hulme,W., Iliev,I., Johnson,R., Jones,C., Kamat,A.,
            Karatas,A., Kells,C., Landers,T., Levine,R., Lindblad-Toh,K.,
            Liu,G., Maclean,C., Macdonald,P., Major,J., Matthews,C.,
            McCarthy,M., Meldrim,J., Meneus,L., Mihova,T., Mlenga,V.,
            Murphy,T., Naylor,J., Nguyen,C., Nicol,R., Norbu,T., Peterson,K.,
            Phunkhang,P., Pierre,N., Raymond,C., Retta,R., Rise,C., Rogov,P.,
            Roman,C., Roy,A., Schauer,S., Schupback,R., Seaman,S., Severy,P.,
            Smith,C., Spencer,B., Stange-Thomann,N., Stojanovic,N., Talamas,J.,
            Tesfaye,S., Theodore,J., Topham,K., Travers,M., Vassiliev,H.,
            Viel,R., Vo,A., Wilson,B., Wu,X., Wyman,D., Young,G., Zainoun,J.,
            Zembek,L., Zimmer,A. and Zody,M.
  TITLE   Direct Submission
  JOURNAL   Submitted (14-JUL-2002) Whitehead Institute/MIT Center for Genome
            Research, 320 Charles Street, Cambridge, MA 02141, USA
COMMENT   On Jul 14, 2002 this sequence version replaced gi:18677463.
            All repeats were identified using RepeatMasker.
            Smit, A.F.A. & Green, P. (1996-1997)
            http://ftp.genome.washington.edu/RM/RepeatMasker.html
            --------------------- Genome Center
            Center: Whitehead Institute/MIT Center for Genome Research
            Center code: WIBR
            Web site: http://www-seq.wi.mit.edu
            Contact: sequence_submissions@genome.wi.mit.edu
            --------------------- Project Information
            Center project name: L10831
            Center clone name: 729_C_24

FEATURES   Location/Qualifiers
     source   1..160042
                     /organism="Homo sapiens"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9606"
                     /chromosome="5"
                     /map="5"
                     /clone="RP11-729C24"
                     /clone_lib="RPCI-11 Human Male BAC"
     repeat_region   complement(2..173)
                     /rpt_family="MER20"
     repeat_region   complement(220..729)
                     /rpt_family="MLTiG"
     repeat_region   complement(942..1226)
                     /rpt_family="HAL1"
     repeat_region   complement(1238..1525)
                     /rpt_family="AluSx"
     repeat_region   complement(1534..1817)
                     /rpt_family="AluJo"
     repeat_region   2275..2777
                     /rpt_family="AluJo"
```

Feature	Location / Qualifier		Location / Qualifier
unsure	/rpt_family="LTR33" 4561..4565	repeat_region	complement(28168..28352) /rpt_family="MER3"
repeat_region	/note="<30 qual SNGL region" complement(4572..4677)	repeat_region	complement(28651..28813) /rpt_family="AluSq"
repeat_region	/rpt_family="MER5B" complement(4698..5484)	repeat_region	complement(28814..29111) /rpt_family="AluY"
repeat_region	/rpt_family="L1MB3A" 7889..7980	repeat_region	complement(29112..29247) /rpt_family="AluY"
repeat_region	/rpt_family="L1MB3" complement(5485..5550)	repeat_region	complement(29258..29535) /rpt_family="AluSq"
repeat_region	/rpt_family="L1MB4" 8100..8872		
repeat_region	/rpt_family="MIR" 9019..9042		
unsure	/note="<30 qual SNGL region" complement(6572..6576)		
repeat_region	/rpt_family="MER5B" complement(6958..7045)		
repeat_region	/rpt_family="L1M1" 7071..7301		
repeat_region	/rpt_family="L2" complement(7323..7456)		
repeat_region	/rpt_family="L2" 11644..11797		
repeat_region	/rpt_family="L3" complement(9090..9155)		
repeat_region	/rpt_family="(TG)n" 9019..9042		
repeat_region	/rpt_family="MIR" complement(13964..14197)		
repeat_region	/rpt_family="MIR" 14204..14339		
repeat_region	/rpt_family="MIR" 14741..14848		
repeat_region	/rpt_family="HY1" complement(14849..15158)		
repeat_region	/rpt_family="AluY" 15167..15200		
repeat_region	/rpt_family="AT_rich" complement(15282..15515)		
repeat_region	/rpt_family="L1ME3" 15664..16081		
repeat_region	/rpt_family="MLT1D" complement(16343..16385)		
repeat_region	/rpt_family="MER91B" complement(17950..18081)		
repeat_region	/rpt_family="L2" 18221..18363		
repeat_region	/rpt_family="MIR" complement(18812..18957)		
repeat_region	/rpt_family="MIR3" complement(19018..19047)		
repeat_region	/rpt_family="L1ME4A" 19048..19348		
repeat_region	/rpt_family="AluJb" complement(19349..19496)		
repeat_region	/rpt_family="L1ME4A" 19607..19630		
repeat_region	/rpt_family="(A)n" complement(19910..20106)		
repeat_region	/rpt_family="MIR" complement(20595..20656)		
repeat_region	/rpt_family="MLT1D" 20657..20966		
repeat_region	/rpt_family="AluJo" complement(20967..21425)		
repeat_region	/rpt_family="MLT1D" complement(22113..22225)		
repeat_region	/rpt_family="MER81" 27048..27346		
repeat_region	/rpt_family="AluSx" complement(27048..27346)		

Query Match 38.3%; Score 634.6; DB 9; Length 160042;
Best Local Similarity 68.6%; Pred. No. 2.4e-105;
Matches 1226; Conservative 0; Mismatches 374; Indels 187; Gaps 18;

```
Qy      1 AGGCAAACACTGAACACATTTCAGAGCCTATGAGAAATAGCTTCTGAATTTGAGTTTGCTAGCTC 60
Db  90098 AGGCAAACGCAGAAACGTTTCAGGAGCCATGAGGAATGCTTCTGCATTTGAGTTTGCTAGGTC 90039

Qy     61 TTGGGCGCTGCCTATGTTTCTGCCTTTCGTGTGAGAAAATCCCATGAAATAGACTGGGTTGGCAG 120
Db  90038 TTGGAGCTGCCTACGTGTATGCCATCCCCACAGAAAATTCCCACGAAGTGCATTGGTGAAAG 89979

Qy    121 AGACCTTGACACTGCCTCTCCACTCATCGAACTTGGCGTGATAGGCGATGGGGTAAATTTTCT 180
Db  89978 AGACCTTGGCACTGCCTTTCTACTCATCGAACTCTCGCTGAGTACCAATGAGAGGTAAATTTTCT 89919

Qy    181 TTTTTGATTCCTACAGTCTTTAAAATGCATGGGGTAAATTGGTGGTGGGTGGCTAGTT----- 234
Db  89918 TTATGATTCCTACAGTCTGTAAAAGTGCATAGGTTAAATCAITTGTTGGATGGTTCCTTTACTAT 89859

Qy    235 -TTTAAAGATCCAATTATCATAAATGAGTAAGAGTGTTAAATAATAATATATATAAATGGGTAACC 293
Db  89858 ATATAGAGATCTGTTATTAAATAAATAAGATTCTGAG-CACATTAGTACAATGGGTGATAACT 89800

Qy    294 ATGTTACTACAGAAGAATTATATTAAAAGTTAATGGAACCTTACAATACAITTAAAAATGAATG 353
Db  89799 ACATCACCAGCAAACAITTCTGTTAATAAAGTTAGATAATGCTGGGTGTGCGTGTAAAAATGATTG 89740

Qy    354 TTGTTTCCTTTCTCTTTTTTCAGAACCTGATGAATTCCTACTCCTGAAAATAAAAATGTAAGTT 413
Db  89739 -TATTTCCTTTCCTCTCTCCAGACTCTGAGGAATTCCCIGTTCCGTGTTTTTAACCTGTAAA 89681

Qy    414 AAAATTATGATTTGATAAAAAATAATTACAATGAATCAGT----TTCATATATTTAAGCTATAAA 469
Db  89680 AAATTATGATTCAGTAAAAATGGCATGAATAAGTAAAATTCCTGTTTTTAACCTGTTTAAAGTT 89621

Qy    470 GTATCAGTTAACATTGGGATGAGTTAATTTTATCTATTTGGTTTATGGTCGGGATGT 529
Db  89620 TCATTAGGTTATCAITGGAACTATTTAAATTTAATTTTGTTTTCATATAIGGGTGGCTGT 89561

Qy    530 AAAT-TATGTGCTTATGAATTATTAGGAAATGGTTGTTAGGAAATGGCTCTACAATATTAAGTA 588
Db  89560 GAATGTCTGTACTTATATAAAATATGAGGAATGACTTT------TTATCAAGTA 89516

Qy    589 GAATCCATTAAGCCAAGTGGGATCAGGGCCCTTTTTTGATGTTGTTGTCAGTTCTCCATCTCAAAG 648
Db  89515 GAATCCTTTAAACAAGTGGAITTAGGCTCTTTGTGANGTTGTTAGTT-TGCCTCCCAAAG 89457

Qy    649 AGCCTCGTGTCAGGCACAITCTTTCCAAAAGAATTCCATATGGGTCAGAGAGATACTTCCTAG 708
Db  89456 AGCATCGTGTCAGGGAITTCTTTCCACAACTGAGTGTGAGAGGTCGGTGCTGCTAG 89397

Qy    709 GCTCCATTCACTCTGTCGTTGGCTTTCCTCACCTCAACGTTTTTTTCTGAAAGTTACTAGCA 768
Db  89396 TCTCCGTGCAGTTCTGAC-----TCTTTCTCACTCTAACGTGTTTTTGAAAGTTATTAGCA 89342

Qy    769 ACTTGGGGTTATATTTTTTAGATTANTGGTCAGTGAGCACATGAAAATATATACAGAGAGTCCT 828
Db  89341 ACTTCAGAATTATATTTTTAGAACCATGATCAGTAGACAITTAAAATATTAAACAAAAATGCC- 89283

Qy    829 ATATTAATTAAGTCACTTCACATATTTAAAATGATTTTAAACTTCAATGATATATACAT 888
Db  89282 -CTATATTAATTAATTTCTGCATACTTAAATAATATATGACTAATGATGGTGTTGTATGCA 89224
```

```
LOCUS       AC116366             169385 bp    DNA     linear   PRI 22-MAY-2002
DEFINITION  Homo sapiens chromosome 5 clone RP11-89G4, complete sequence.
ACCESSION   AC116366
VERSION     AC116366.2  GI:21070669
KEYWORDS    HTG.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 169385)
  AUTHORS   DOE Joint Genome Institute and Stanford Human Genome Center.
  TITLE     Direct Submission
  JOURNAL   Unpublished
REFERENCE   2  (bases 1 to 169385)
  AUTHORS   DOE Joint Genome Institute.
  TITLE     Direct Submission
  JOURNAL   Submitted (27-MAR-2002) Production Sequencing Facility, DOE Joint
            Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA
REFERENCE   3  (bases 1 to 169385)
  AUTHORS   DOE Joint Genome Institute and Stanford Human Genome Center.
  TITLE     Direct Submission
  JOURNAL   Submitted (22-MAY-2002) DOE Joint Genome Institute, 2800 Mitchell
            Drive, Walnut Creek, CA 94598, USA
COMMENT     On May 22, 2002 this sequence version replaced gi:19745048.
            Draft Sequence Produced by DOE Joint Genome Institute
            www.jgi.doe.gov
            Finishing Completed at Stanford Human Genome Center
            www-shgc.stanford.edu
            Quality: Phrap Quality >=40 99.9% of Sequence;
            Estimated Total Number of Errors is 0.1.
FEATURES             Location/Qualifiers
     source          1..169385
                     /organism="Homo sapiens"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9606"
                     /chromosome="5"
                     /clone="RP11-89G4"
ORIGIN
```

Query Match   38.3%; Score 634.6; DB 9; Length 169385;
Best Local Similarity   68.6%; Pred. No. 2.4e-105; Mismatches 374; Indels 187; Gaps 18;
Matches 1226; Conservative   0; Mismatches 374;

```
Qy        1 AGGCAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTGAATTTGCTAGCTC 60
            |||||| || || | |||| ||||||||||||||||| |||||||| ||||||||||||||
Db   155061 AGGCAAAACGCAGAAACGTTTCAGAGCTCCATGAGAAGCCATGGATTGAGAATTGAGTTGCTAGCTC 155002

Qy       61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGGTGGCAG 120
            ||||| |||||| |||||||| |||| | |||||||||||||||||||| ||| || || ||
Db   155001 TTGGAGCTGCCTACGTGTATGCCCATCCCACAGAAAATTCCCACAAGTGCATTGGTGAAAG 154942

Qy      121 AGACCTTGACACTGCGTCTCCACTCATCGAACTGGCTGCTGAATAGGCGATGGGGTAATTT 180
            ||||||| ||||||| | |||| |||| ||||||| ||||| || |||| | ||||||||||
Db   154941 AGACCTTGGGCACTGCGTTCTCCACTCATCGAACTCTGCTGATTAGCCAATGAGGTAATTTTTCT 154882

Qy      181 TTTTGATTCCTACAGTCTTTAAAATGCATGGGTAATTGGTGGTGGGGCTAGTT------- 234
            ||||||||| || | ||||||||| |||||||||||| |||||| ||||||| |||
Db   154881 TTATGAGTTCCTACAGTCTCGTAAAGTGCATAGGTAATCATTTGTGTGATGGTTCCTTTACTAT 154822

Qy      235 -TTTAAAGATCCATTATCAATAAATGAAGTAAGTTAATATTATATATATGGGGTAACC 293
             ||||||||| |||||||||||||||||| ||||||||||||| | ||||| |||||||
Db   154821 ATATAGAGATCTGTTATATAAAAATAAGAGTTTAATGAGTGTTAATAATATATAATGGGGTGATAACT 154763

Qy      294 ATGTTACTCAGAGAATTATATTAAAAGTTATGAACCTTACAAATACAACATTAAAAAATGAAATG 353
            ||||| |||| || |||| | ||||| || | |||| |||| | |||| ||||| |||||| |||
Db   154762 ACATCACCACAAAACATTCTGTTAAAGTTAITGAAGTTATGAACGACTGCTGTGCTCTGATGAGTTG 154703

Qy      354 -TATTTCCTTTCCTTCCCAGACTTCGAG 413
             ||||||||| |||||| |||||||||||
Db   154702 TTGTTTCCTTCTTTTTTCAGAACCTGATGATTCCTACTCCGTGAAAATAAAAAGTGTAAGTT 154644

Qy      414 AAATTATGATTTGATAAAATGATTACATGAATCAGT--- 469
            ||||||||||||| |||||||| |||||||| || |||
Db   154643 AAATTATGATTCAGTAAAAATGACATGGAATAAAATCTGTAA TTCATTATTTTAAGCTATAAA 154584

Qy      470 GTATCAGTTAACATTGGGATGATTAAITTAATTTAATTTATCTATTTGTTTTTATGTGTGCGGATGT 529
            |||||||||| |||||||||| |||||| | ||||||||||| |||||| |||| || ||||||||||
Db   154583 TCATTAGTTATCATTGGGAACTAITTAAITTTCTATATTTTGTTTTCATATGTGTGGCTGT 154524

Qy      530 AAAT-TATGTCGTTATGAATATTAGAAATGGTGTTAGGAATGGCTCTACACAATATTAAGTA 588
            ||| |||| |||||||||||||||| || |||| |||||||||||||| || ||||||||
Db   154523 GAAATGTCTGTACTTATAAAATATGAGGAATGACTTT------------------TTATCAAGTA 154479
```

```
Qy    589 GCTCCATTCACCTCTGTCGTTCGGTTGGGCTTTCTTCCTCACCTCAAACGTTTTTCTGAAAGTACTACTTAGCA 648
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 154478 GAATCTTTTAAACAAGTGGATTAGGCTCTTCTTTGGTGATTGTTGTTAGTT-TGCCTCCCAAAG 154420

Qy    649 AGCCTCGTCGTCAGGCATTCATTCTTTTCAAAAGAAGATTCCATATTGGGTCAGAGATACTTCCTAG 708
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 154419 AGCATCGGTCGTCAGGGAATTCTTTCCCAGAAGGAATTCCACACTGAGTGAGATACTTCCTAG 154360

Qy    709 GCTCCATTCACCTCTGTCGTTCGGTTGGGCTTTCTTCCTCACCTCAAACGTTTTTCTGAAAGTACTACTTAGCA 768
Db 154359 TCTCCGTGCAGTTCTGAC-----TCTTTCTCACTCTAACGTGTTTCTGAAAGTATTAGCA 154305

Qy    769 ACTTGGGGTTATATTTTTAGGAATTAGTCAGTAGACATTGAAACCATGATCAGTAGACATTAAAAAATGCC- 828
Db 154304 ACTCAGAATTATATATTTTAGGAACCATGATCAGTAGACATTAAAAAATATACAAAATGCC- 154246

Qy    829 ATATTAATAAGTCACTTCCACATATTTAAATGATTTTTAACTCATAAAATAATTATACACAT 888
Db 154245 -CTATATAATAATTTCTGCATACTTAAATAATTTATATGACTATATAGCTAAAATATGA 154187

Qy    889 CTGGGAGTATATGTCATGTTGGTCATTATTAGTTATTATTTAAAAAATGTGATATCATTAGTCTAAAATAGA 948
Db 154186 TTTGAATATGTCCTGGTCATTAATTTAAAAGTAAAATAATTAGTTTTTATTAGTCTAAAATAGA 154127

Qy    949 ATAAAAATTACCAGCTAGAACTATACGAGGAAATTCTGAGGGTCAGGTAAATCAGTAAGGCA 1008
Db 154126 ATAAAAACTACCAGCTAGAAACTGTAGAAACACAT--TGATATGAGTTTAATGTATA--- 154073

Qy   1009 GTTGTATTATACCTCGTAAGCAATTAATTATTTCATTAATCATTCATTCATTATATCATTGTA 1068
Db 154072 --TGCATTACACTTCCAAAACATTTTTTCCAGTTACAGTTACATAATTAAGTATATCCTTTATA 154015

Qy   1069 ACACTTCTCAGTAATTATATAAAACATCATTTAC-TTATGGTAATTTATAGCTTAGTTATTAAG 1127
Db 154014 AAACTCCTCAGTAATCAATATAAGCTTCAICTCTACTTTTTGAAATTTTTATCTTAATAATGTG 153955

Qy   1128 GTGGGTTTCCCACCTGGAAAAGACACAAGTAAAAACCTTCTGGGAGGAAGGGAAACTTGTGTA 1187
Db 153954 GTGGGTTTGTTGTCCTAGAAA---ACAAACAAAAAACTCTTTTGGAGAAGGGAACTCATGTA 153899

Qy   1188 AACCCCACAAAAACAAAGTCTAACTTT--- 1213
Db 153898 AATACCACAAAAACAAAAGCCTAACTTTGTTGGGACCAAAAATTGTTTTAATTAATTATTTTTTAA 153839

Qy   1214 ------ 1213
Db 153838 TTGATGAATTAAAAAGTATATATTTATTGTGTACAATATGAIGTTTTGAAGTATGTAT 153779

Qy   1214 ------ 1213
Db 153778 ACATTGCAGAATGGACAAATGGACCAAAATTTTATACTTGTGTCTTGATTATTAT 153720

Qy   1214 ------ 1213
Db 153719 AAAAATTTCCTCATTTAGCACCAACTGTGCCACTGAAGAAATCTTCAGGGBAATAGGCAC 153660

Qy   1257 TAAAATCTTCCTCATTTAGCACCAACTGTGCATTAAAGAAGTTTTCAGGGTATAGACAC 1316
Db 153659 ACTGGAGAGTCAAACTGTGCAAGGGGTACTGTGGAAAGACTATTCAAAAACTTGTCCTT 153600

Qy   1317 ATTGAAGAACCAAAACTGCCCCACGGGATAAACTAACTATTATTCAAACTTGTCTTT 1376
Db 153599 AATAAAAGAAAATACATTGAAGAAGTTAAAGAACGGCCAAAAAGTAAGGTTACACACAATT----- 153545

Qy   1377 AATAAAAGAACACATAGAGCGGCCAAAAAGTAAGTAAGTTAAAGACATTGGCAAAAAACTTAAGT 1436
Db 153544 ATATTTGTCTGGCTCTGCGTGTTTTTTTTTTTTTTACAAGAATTGACAGTTTCCTG 153499

Qy   1437 ATATTTGTCTGACTCTGCGTGTTTTTTTTTTTTTTTTTTTACAAGAATTGACAGTTT----- 1496
Db 153498 TAATACCTTATTGTCATTTTCTTTTTTCACAGAAAAAGTGTGGAGAAGAAACGGAGAG 153439

Qy   1497 CAATATCT-----CCTCTGTCTTTTTTAACGAAAAAGGTGTGCAGAGAGAAAGTGAGAG 1550
Db 153438 TAAACCAATTCCTTAGACTACCCTGCAAGAGAGTTTCTTGGGTGTGTAATGAACACCGAGTGGGATAA 153379

Qy   1551 TGACAAAGTTCCTTAGACTACCTGCCAAGTATATTCTTGGTGTTGGTTAATAAAAACACCGAGTGGGAC 1610
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 153438 TAAACCAATTCCTTAGACTACCCTGCAAGAGAGTTTCTTGGGTGTGTAATGAACACCGAGTGGGATAA 153379

Qy   1611 CGGAAAAGTTGAGAAACAAACCCGCCGTTATTGTAGTGGAGAGATTTGGAG 1657
          |||||||||||||||||||||||||||||||||||||||||||||||||||
Db 153378 TAGAAAGTTGAGACTAAACTGGTTTGTTGCAGCCAAAGAGATTTTGGAG 153332
```

```
RESULT 7
AC150628/c
LOCUS       AC150628           157168 bp    DNA       linear   HTG 31-AUG-2004
DEFINITION  Papio anubis clone RP41-38K18, WORKING DRAFT SEQUENCE, 8 ordered
            pieces.
ACCESSION   AC150628
VERSION     AC150628.2  GI:51699550
KEYWORDS    HTG; HTGS_PHASE2; HTGS_DRAFT.
SOURCE      Papio anubis (olive baboon)
  ORGANISM  Papio anubis
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
            Cercopithecinae; Papio.
REFERENCE   1  (bases 1 to 157168)
  AUTHORS   Antonellis,A., Ayele,K., Benjamin,B., Blakesley,R.W.,
            Bouffard,G.G., Brinkley,C., Brooks,S., Chu,G., Coleman,B.,
            Coleman,H., Daki,N., Engle,J., Guan,X., Gupta,J., Haghighi,P.,
            Han,J., Hansen,N., Ho,S.-L., Hu,P., Hurle,B., Idol,J.R., Jones,C.,
            Karlins,E., Kim,H., Kwong,P., Laric,P., Larson,S., Lee-Lin,S.-Q.,
            Legaspi,R., Madden,M., Maduro,Q.L., Maduro,V.B., Margulies,E.H.,
            Masiello,C., Maskeri,B., McDowell,J., Mullikin,J.C., Paguirigan,C.,
            Park,M., Portnoy,M.E., Prasad,A., Puri,O., Reddix-Dugue,N.,
            Schandler,K., Schueler,M.G., Shah,K., Sison,C., Stantripop,S.,
            Thomas,J.W., Thomas,P.J., Tsipouri,V., Vogt,J.L., Wetherby,K.D.,
            Young,A. and Green,E.D.
  TITLE     NISC Comparative Sequencing Initiative
  JOURNAL   Unpublished
REFERENCE   2  (bases 1 to 157168)
  AUTHORS   Green,E.D.
  TITLE     Direct Submission
  JOURNAL   Submitted (28-JUL-2004) NIH Intramural Sequencing Center,
            Grovemont Circle, Gaithersburg, MD 20877, USA
REFERENCE   3  (bases 1 to 157168)
  AUTHORS   Green,E.D.
  TITLE     Direct Submission
  JOURNAL   Submitted (31-AUG-2004) NIH Intramural Sequencing Center, 8717
            Grovemont Circle, Gaithersburg, MD 20877, USA
COMMENT     On Aug 31, 2004 this sequence version replaced gi:50726786.
            -------------------- Genome Center
            Center: NIH Intramural Sequencing Center
            Center code: NISC
            Web site: http://www.nisc.nih.gov
            Contact: nisc_zoo@nhgri.nih.gov
            -------------------- Project Information
            Center project name: hbu
            Center clone name: 038K18
            --------------------
            The sequence data in this record represents an 'enhanced'
            version of a Phase 2 submission. Specifically, the indicated
            order and orientation of each sequence contig has been
            established using one or more of the following: read-pair
            data from individual subclones, overlaps with neighboring
            clones, alignment with available reference sequence (e.g.,
            human), and/or confirmation by PCR testing. In addition,
            the sequence assembly is based on at least 8X average
            coverage in Q20 bases and has been reviewed to rule out
            gross misassemblies, the low-quality ends of sequence
            contigs have been trimmed away, and each base is associated
            with a Phrap-derived quality score.
            -------------------- Summary Statistics
            Sequencing vector: plasmid; n/a; 100% of reads
            Chemistry: Dye-terminator Big Dye; 100% of reads
            Assembly program: Phrap; version 0.990319
            Consensus quality: 154676 bases at least Q40
```

```
        Consensus quality: 155662 bases at least Q30
        Consensus quality: 156222 bases at least Q20
        Insert size: 171000; agarose-fp
        Insert size: 156468; sum-of-contigs
        Quality coverage: 9.84x in Q20 bases; agarose-fp
        Quality coverage: 10.75x in Q20 bases; sum-of-contigs
-----------
* NOTE: This is a 'working draft' sequence. It currently
* consists of 8 contigs. Gaps between the contigs
* are represented as runs of N. The order of the pieces
* is believed to be correct as given, however the sizes
* of the gaps between them are based on estimates that have
* provided by the submittor.
* This sequence will be replaced
* by the finished sequence as soon as it is available and
* the accession number will be preserved.
*
*       1       1224: contig of 1224 bp in length
*       1225    1324: gap of unknown length
*       1325    3332: contig of 2008 bp in length
*       3333    3432: gap of unknown length
*       3433    15416: contig of 11984 bp in length
*       15417   15516: gap of unknown length
*       15517   20112: contig of 4596 bp in length
*       20113   20212: gap of unknown length
*       20213   121201: contig of 100989 bp in length
*       121202  121301: gap of unknown length
*       121302  149955: contig of 28654 bp in length
*       149956  150055: gap of unknown length
*       150056  153282: contig of 3227 bp in length
*       153283  153382: gap of unknown length
*       153383  157168: contig of 3786 bp in length.

FEATURES             Location/Qualifiers
     source          1..157168
                     /organism="Papio anubis"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9555"
                     /clone="RP41-38K18"
                     /clone_lib="RP41"
                     /note="BAC resource: http://bacpac.chori.org/"
     misc_feature    1..1224
                     /note="assembly_fragment
                     clone_end:T7
                     vector_side:left"
     misc_feature    1..6
                     /note="clone overlaps with GenBank Accession Number
                     AC149182 clone RP41-371G23 (center project name hbv)"
     misc_feature    1325..3332
                     /note="assembly_fragment"
     misc_feature    3433..15416
                     /note="assembly_fragment"
     misc_feature    15517..20112
                     /note="assembly_fragment"
     misc_feature    20213..121201
                     /note="assembly_fragment"
     misc_feature    121302..149955
                     /note="assembly_fragment"
     misc_feature    150056..153282
                     /note="assembly_fragment"
     misc_feature    153383..157168
                     /note="assembly_fragment
                     clone_end:SP6
                     vector_side:right"
ORIGIN

        Query Match     37.8%;  Score 626.8;  DB 2;  Length 157168;
        Best Local Similarity   67.9%;  Pred. No. 6.2e-104;
        Matches 1213; Conservative  0; Mismatches 392; Indels 181; Gaps 17;
```

```
Qy      1 AGGCAAACACTGAACATTTCAGAGCTATGAGGAATGCTTCTTGAATTTGAGTTTGCTAGCTC 60
          ||||| ||||||| |||||||||| ||||||||||||||||||| ||||||||||||||||
Db  37254 AGGCAAAAGGAGAGAACATTTCAGAACCGTGAGGATGCTTCTACATTGAGTTTGCTAGCTC 37195

Qy     61 TTGGGGGCTGCCTATGTTTCTGCCTTTGCTGTGAGAAAATCCCATGAATAGACTGGTGGCAG 120
          ||||||                                                  ||||||
Db  37194 TTGGGAGCTGCTTACATGGTATGCCGTGCCCCACGAGAAATTCCCACAAGTGCATTGGAAG 37135
```

```
Db  37134 AGAACCTTGGACACTGCTTCCACTCATCGAACTCTCCTGCTGATGGATGGGGGTAAGTTCT 37075
          |||||| || | |||||  ||||||||||| ||||||| || |||| |  || | |||||

Qy    121 AGACCTTGACACTGCTCCACTCATCGAACTCGCTGCTGATGAGGCGGATGAGGGTTAATTT 180
```

```
Qy    181 TTTTGAATTCCTACAGTCTTTAAAATCCATGGGGTAATTGGTGGTGGTGGTTAGTT------ 234
          |||||||||  ||||| ||||||||||||| |||||| |  ||  |   || || 
Db  37074 TTATGGTTCCTATAGTCTTTAAAGTGCATAGGTAGGTAATCATTGTGATGGTTGCTTACTAT 37015
```

```
Db  37014 ATATAGAGATCTGTTATTATAAATAAGATTCATGAG-CATGTTAGTACATGAGTGATAACT 36956
          ||||||| | ||||| | | ||| |||| ||||| | |||| ||||| || || || |

Qy    235 -TTTAAAGATCCATTATTCAATAAATGAAGTAATTCATGGGGTAATTGGTGGTGGTTAACC 293
```

```
Qy    294 ATGTTACTCAGAAGAATTATTATTAAAAGTTAATGAACCTTACAATACATTAAAAATGAATG 353
          |||| |||||||| |||| ||| |||| ||| |  || ||||| ||| ||| || | ||||
Db  36955 ACATCACCAGCAAACATTCCATTAAAAAGTTGTGAATGCTGAATGTGCTGTTAAAAATGATTG 36896
```

```
Db  36895 -TATTTCCTTTCTTTCAGAACCTGATGCTTACTCCTGAAAATAAAATGTAAGTT------ 36837
          |||||  |||| ||| |||| |||| | ||||| |||||||||| | |||||||

Qy    354 TTGTTTCCTTTTCTTTCAGAACCTGATCCTATCTGAAAGTTGTGAAATGCTGAATGTGTTAAG 413
```

```
Qy    414 AAAATTATTGATTGATAAAAATGATTACATGAATACAG----TTTCATATTTTTAAGCTATAA 469
          |||||| || |||| |||||| ||||   || |||     ||||| || |  ||||| | |
Db  36836 AAATTATGATTCAATAAAATGGCATGAATAAGGAAAATTCCTAGTATTTTGTTTTTATGGCTGTAAA 36777
```

```
Db  36776 TCATTAGTTATCATTGGAACTCTTTAATTTTGTTTTTATGTGTGCGGATGT 36717
          ||||||| ||| |  |||||| ||| ||||||| | |||| || || ||||

Qy    470 GTATCAGTTAACATTGGGATGATTAATTAATTTATCATTTTGTTTTATGGGTGTTGT 529
```

```
Qy    530 AAAT-TATGTGCTTATGAATATTAGAATGGTGTTAGGGAATGGCTCTACAATATTAAGTA---- 588
          |||| ||| | ||||| |||||| |||||| | |           ||| |  |||||||
Db  36716 GAATGTCTGTACTTATAAATATGGACTT------------TTATCAAGTA 36672
```

```
Db  36671 GAATCCTTTAAACAAGTGGGATTAGGCTTCTTGGTGATGGTTATTAGTT-TGCCTCCCAAAA 36613
          |||||| ||  ||| |||| ||  || |||| |||| | ||||||||| |||| ||||||

Qy    589 GAATCCATTAAGCAGAAGTGGGATCAGGCCCTTTTTTGGTGATGTTCAGTTGTCAGTTCTCAAAG 648
```

```
Qy    649 AGCCTGGTGTCAGGCCATTCTTCCCAAAAGAATTCCATATGGGTCAGAGATACTTCCTAG 708
          || |||| || ||| | ||| |||  ||| ||||| || || ||  || || ||| |||
Db  36612 AGCATCGTGTTCAGGGAATTCTTCCGACACTGAGTGAGGTGCCGCTAG 36553
```

```
Db  36552 TCTCTGTGCCGGTTCGACTAGGGTCTTTCTCACTCTAAAGTCCTAAAGCGTAAAGTA 36493
          ||| | || |  ||| || |||| ||||| | ||| |  || |  || || |||||

Qy    709 GCTCCAATCACCTCTGTGGTTGGTTCCTCACCTCAACGTTTTTCTGAAGTACTAGCA 768
```

```
Qy    769 ACTTGGGGTTATAATTTTTTAGGAATTATGGTCAGTGAGCATGAAAATATACAGTGAGTTCCT 828
          ||| ||| ||| | | |||| || || ||| || ||  | | ||||  |  |||| ||||
Db  36492 ACTCAGAATTATATTTTTTAGAACCATGGTGGGCATTGAGAGTCACATTAACAATGCC- 36434
```

```
Db  36433 ATATTAATAAGTCCACTTCCACATATTTAAATGATTTTAACTCTAAGTCATATATACAT 36375
          || |||||||  ||| || ||| ||| |||| ||||||  |||   || ||| || |||

Qy    829 ATATTAATAAGTTCACTTCCACATATTAAACGATTTTAAACTCTAAGGTCAATACATATACAT 888
```

```
Qy    889 CTGGAGTATGTCATGGTCATTATTATAAAAATGTAAATAATAAAAGTCTAAAATAGA 948
          ||  || | | | |||  |||||||||| |||| |||  ||| || || || |||||
Db  36374 TTTGAATATGTGCCTGGTTCATTATTAAAAAATGTAAAATGTTAAGTCTAAAAATAGA 36315
```

```
Db  36314 ATGAAAACTACCAACTAGAAACGTAGAAAACACAT--TGATGTGAGTTTTAATGTATA----- 36261
          ||||||| ||||  ||||| ||| | ||| ||||  |||| ||||| ||||| |||

Qy    949 ATAAAAATTACCAGCTAGAACTATACGAGGAAAATTCTGAGGTGGAGGTAAATCAGTAAGGCA 1008
```

```
Qy   1009 GTTGTATTATACCTCGTAAGGAATTTCATTAAATCATTTCATTATAATCATTGTA 1068
          |||||||| |  ||||| | | |||||| | ||||| | |  ||| ||| |||||
Db  36260 --TGTATTACACTTCCAAAACATTTTTTCAAGTTACATAATTAAGTTATATATCCTTTATA 36203
```

```
Db  36202 AAACTCCTCAGTAATCTTTATAAGCTTCATCTACTTTTTGAAAAATTTATCTCAAATATGTG 36143
          |||| ||| ||||| | ||||| ||| ||| | ||  |||||| |||| ||| || ||

Qy   1069 ACACTTCTCAGTTAATATTATAAAACATCATTTAC-TTATGGTAATTATAGCTTAGTATAAG 1127
```

```
Qy   1128 GTGGGTTCCACCTGGAAAAGACACAAGTAAAAACCTTCTTGGGGAGAGGGAACTTGTGTA 1187
          |||||| | || |  | |  | || | ||| | ||  |||  |||| ||  || || ||
Db       ||||| |  ||     | |||   |||||| || ||    ||||   || ||  |||
```

```
RESULT 8
AR136275
LOCUS       AR136275               3230 bp    DNA    linear    PAT 16-JUN-2001
DEFINITION  Sequence 78 from patent US 6136603.
ACCESSION   AR136275
VERSION     AR136275.1  GI:14476947
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 3230)
  AUTHORS   Dean,N.M., Karras,J.G. and McKay,R.
  TITLE     Antisense modulation of interleukin-5 signal transduction
  JOURNAL   Patent: US 6136603-A 78 24-OCT-2000;
FEATURES             Location/Qualifiers
     source          1..3230
                     /organism="unknown"
                     /mol_type="unassigned DNA"
ORIGIN
```

Query Match   36.2%; Score 600.6; DB 6; Length 3230;
Best Local Similarity   67.8%; Pred. No. 6.9e-99;
Matches 1212; Conservative   0; Mismatches 384; Indels 191; Gaps 19;

```
Qy         1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAAATTGAGTTTGCTAGCTC 60
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       527 AGGCAAACGCGAGAACGTTTCAGAGCCATGAGAGAATGCTTCTCCAGATGAGTTGGTGGTGA 586

Qy        61 TTGGGGGCTGCCTATGTTTCTGCCTTTGTGTAGAAAATCCCATGAATGAGACTGGTGGCAG 120
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       587 TTGGAGCTGCCTACGTGTATGCCATCCCCACAGAAAATCCCACAGAAGTGCATTGGTGAAG 646

Qy       121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGTAATTTCT 180
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       647 AGACCTTGGCACTGCTTTCTACTCACTCATGGGTAATTTTGTGTGGTGGTGGCTAGTT 706

Qy       181 TTTTGATTCCTACAGTCTCTTTAAAATGCATGGGTAATTGGTAATAGCATGTAGTT 234
             ||||||||||||||||||||||||||||||
Db       707 TTATGATTCCTACAGTCTGTAAAGTGCATAGGTGAATCATTGTGAGGTTGATGGGTAGGATTTACTAT 766

Qy       235 -TTTAAAGATCCATTATCAATTAATGAAGTAATGAGTGTTAATGGGTAACC 293
             |||||||||||||||||||||||||||||||||||||
Db       767 ATATAGAGATCGTTATTAAATTAGTTGTTTAGTGTATATAATGTATAACT 825

Qy       294 ATGTTACTTCAGAAGAATTATATTTAAAGAAGTTATGAACCTTACAATACATTAAAATGAATG 353
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       826 ACATCACCAGCAAACAATTCGTTAATAATGGTTATAGGGTTGCGTGTAATAGCCACA 885

Qy       354 TTGTTTCCTTTCTTTTTTTCAGAACCTGATGAATCCTAGTCTGAAAAATAAAATGTCTTTA 413
             |||||||||||||||||||||||||||||||||||||||||||||||||
Db       886 -TATTTCCTTTCCTCTCCGACTCGTACCATGAAAAGTCTCCTGTACATGAATGAATGGTT 944

Qy       414 AAAATTAATGATTGATAAAAAATGATTACATGAAAATCAG----TTTCATATTTAAAA 469
             ||||||||||||||||||||||||||||||||||||||||
Db       945 AAAATTATGATTCAGTAATGAGTAAATGGGCATGAATAAGAATAGAAAATTCCTGTTTAAA 1004

Qy       470 GTATCAGTTAACATTGGGATGATTAATTGACAGTTACAGTTCCTAC 529
             |||||||||||||||||||||||||||||||||
Db      1005 TCATTAGTTATCATTGGAACTATTTAATTTAATTGTTTTCATATGGGTGCT 1064

Qy       530 AAAT-TATGTGCTTATGAATATGTCAGTAGACATGAGAATGGTCTGT 588
             |||||||||||||||||||||||||||||||
Db      1065 GAATGTCTGTACTTATAAAATGAGGAATGACTTT------TTATCAAGTA 1109

Qy       589 GAATCCATTAAGCAAGTGGATCAGGCCCTTTTTGATGGTGTCAGTTCTCCATCTCAAAG 648
             ||||||||||||||||||||||||||||||||||||
Db      1110 GAATCCTTTAAAACAAGTGGATTAGGGTCTTGGTGATGGTTGTTAGTTCAGTTTGCCTTCCCAAAG 1169

Qy       649 AGCCTCGTGTCAGGCATTCTTTCCAAAAGAATTCCATATTGGGTCAGAGATACTTCCTAG 708
             |||||||||||||||||||||||||
Db      1170 AGCATCGGTGTCAGG-ATTCTTTCCAGAGGATTCCACACTGAGTGAGAGGCTGCTGCTAG 1228

Qy       709 GCTCCATTCACCTCTGTCGTGGCTTTCCTCACCTCAACGTTTTTCGAAGTACTAGCA 768
             ||||||||||||||||||||
Db      1229 TCTCCCGTGCCAGTTCTTGAC----TCTTTCCACTCTCAAGCTGTTTTCTGAAAGTATTAGCA 1283

Qy       769 ACTTGGGGGTTATATTTTAGAATTATGGTCAGTGAGACATGAGAAAATACAGTGAAGTCCT 828
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1284 ACTCAGAATTATATTTTTTGGAACCATGACATCAGTAGACACATTAATAACAAATCC- 1342

Qy       829 ATATTAATTAAGTCACTTCCACATATTTAAATGATTTTAACTTCTAATGAATCATATCAT 888
             ||||||||||||||||||||||||||
Db      1343 --CTATATTAATAATTCTGCATACTTAAATAATTTAAAATGTTAAAAATGTTAATCATTGTTCTTAAAATAGA 1400

Qy       889 CTGGAGTATGTCATGGTCATGAAATTGAATTTAAAAATGTGATATCATTAAGTTCAAATAGA 948
             ||||||||||||||||
Db      1401 TGAATACG---CCTGGTCATATTAAAAATGTAAAATATATAGTTT-ATTAGTCTAAATAGA 1456

Qy       949 ATAAAAATTACCAGCTAGAACTATACGAGGAAAATTCTGAGGGTGAGGTAAATCAGTAAGGCA 1008
             ||||||||||||||||||||||||||||
Db      1457 ATAAAAAACTACCAGCTAGAACTGAGAAAACAT--TGATATGAGGTTGAGGTGAGGGCTAG 1513

Qy      1009 GTTGTATATACCTCGTTAAGCATTATTTTTTCATTTATATCATTTCATTTATTCATTTGTA 1068
             |||||||||||||||||||||||||
Db      1514 -----ATTACACTTCCAAAACATTTTTTCCAGTTACATAATTAAGTTATATCCTTTATA 1568

Qy      1069 ACACTTCTCAGTTAATTATATATAAACATCACATTTAC-TTATGGTAATTATTAGTTATAAG 1127
             |||||||||||||||||||||||||||||||
Db      1569 AAACTCCTCAGTAATCATATAAGCTTCATCTACTTTTTGAAAATTTATCTTAATATGTG 1628

Qy      1128 GTGGTTTCCCACCTGGAAAAAGACACAAGTAAAAAACCTCTTGGGAGAAGAGGGAACTTGTGTA 1187
             |||||||||||||||||||||||
Db      1629 GTGGTTTGTTGCCTAGAAA----ACAAACAAAAAACTCTCTTGGAGGAGAAGGGAACTCATGTA 1684
```

```
RESULT 9
BD247730
LOCUS           BD247730           3230 bp    DNA      linear    PAT 17-JUL-2003
DEFINITION      Antisense modulation of interleukin-5 signal transduction.
ACCESSION       BD247730
VERSION         BD247730.1    GI:33057500
KEYWORDS        JP 2002539846-A/78.
SOURCE          Homo sapiens (human)
  ORGANISM      Homo sapiens
                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE       1  (bases 1 to 3230)
  AUTHORS       Dean,N.M., Karras,J.G. and McKay,R.
  TITLE         Antisense modulation of interleukin-5 signal transduction
  JOURNAL       Patent: JP 2002539846-A 78 26-NOV-2002;
                ISIS PHARMACEUTICALS INC
COMMENT         OS    Homo sapiens (human)
                PN    JP 2002539846-A/78
                PD    26-NOV-2002
                PF    17-MAR-2000 JP 200608790
                PR    26-MAR-1999 US 09/280799
                PI    NICHOLAS M DEAN, JAMES G KARRAS, ROBERT MCKAY
                PC    C12N15/09,A61K31/711,A61K48/00,A61P11/06,A61P29/00,A61P35/00,
                PC    A61P43/00,C12N5/02,C12N15/00
                CC    Antisense modulation of interleukin-5 signal transduction FH
                Key      Location/Qualifiers
                FT    source   1..3230
                FT             /organism='Homo sapiens (human)',
```

```
ORIGIN

Qy          Query Match      36.2%;    Score 600.6;  DB 6;  Length 3230;
            Best Local Similarity    67.8%;   Pred. No. 6.9e-99;
            Matches 1212;   Conservative   0;  Mismatches 384;  Indels 191;  Gaps 19;

Qy          1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAAATTTGGAGTCTAGCTC   60
              |||||||||||||||||||||||||||||||| |||||||||||||||||||||||||||
Db        527 AGGCAAACGCAGAACGTTTCAGAGCCCATGAGAGATGGCTTCCGCATTTGAGTTTGCTAGCTC  586

Qy         61 TTGGGGCTGCCTATGTTTCTGCCTTTGCCTGTGTAGAAATCCCATGAATAGAGACTTGGTGGCAG  120
              |||||||||||||||||||||||||||| ||||||||||||||||||||||||||||||||||||
Db        587 TTGGGACTGCCTACGTGTATGCCATCCCACAGAAATTCCCACAGTGCATTGGTGAAAG  646

Qy        121 AGACCTTGACACTGCTCTCCCACTCATCGAACTGGGCTGGTGATGAGTGGGGTAATGTTCT  180
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        647 AGACCTTGGCACTGCTCTTTTCTACTCATCCGATTGGGCCCAATGAGGGGTAATTTTCT  706

Qy        181 TTTTGGATTCCTACAGTCTTTAAAATCCATGGGGTAATTGGGTGGTGGGGCTAGGTT------  234
              ||||||||||||||||||||||||||||||||||| ||||||||||||||||||||||
Db        707 TTATGGATTCCTTACACGTCTGTAAAAGTGCATAGGTAATCATTTGTGATGGTTCCTTTACTAT  766

Qy        235 -TTTAAAGATCCATTATCAATAAATGAAGTGAATGTTAATAATAATATATATGGGGTACC  293
               ||||||||||| || || |||||||||||||||||||||||||||||||||||||| ||
Db        767 ATATAGAGATCTGTTATTATAAAATAAGAATCTGAG-CACATTAGTAACATTAGTTACT  825

Qy        294 ATGTTACTCAGAAGAATTATTATTAAAAGTGTGCAGGGAGAGAGATGGGAGAG  353
              ||||||||||||||||||||||||||| |||||||||||||||||||||||||
Db        826 ACATCACCAGGAAACAAATTCTTGTTAAAAGTAAAAGTTATGAAATCAGATGCTTGGTGTAAATATTG  885

Qy        354 TTGTTTCCTTTCTTTTTTCAGAACCGTGATGATTCCTACTCCTGAAAATAAAAATGTAAGTT  413
              ||||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        886 -TATTTCCTTTTCCTCTCCAGACTCTGAGGATGTTGTTAGTTGCCTTCGCTTCCCAAAG  944

Qy        414 AAAATTATGAATTGAAATAAAAATGATTACATGAATCAG---TTTCATATTTTAAGCTATAAA  469
              ||||| |||||||||||||||||||||||||||||||||   ||||||||||||||||||||
Db        945 AAAATTATGAATTCAGTAAAAATGGGCATGAAAAAATTCCTGTTTTAAGCTGTAAA  1004

Qy        470 GTATCAGTTAACATTGGGATGATGAATGATTTAATTTTATCTATTTTGTTTTTATGTGTGCGGATGT  529
              |||||||||||||||||||||||||||||||||||||||| ||||||||||||||||||||||||||
Db       1005 TCATTAGTTATCATTGGAACTATTTAATTTTAATTTTCATATAGGGTGGTGT  1064

Qy        530 AAAT-TATGTGCTTATGAAATTAGAATTAGGAATGGTGTTAGGGAATGGCTTACAATATTAAGTA  588
              |||| |||||||||||||||||||||||||||||||||||||||||| ||||||||||||||||
Db       1065 GAAATGTCTGTACTTATAAAATATATGAGAGGAATGACTTT-----TTTATCAAGTA  1109

Qy        589 GAATCCATTAAGCAAGTGGATCAGGGCCCTTTTTTTGATGTTGTGTTCAGTTCCATCTCAAAG  648
              |||||||||||||||||||||| |||||||||||||||||||||| |||||||||||||||||
Db       1110 GAAATCCTTTAAACAAGTGGATTAGGCTTCCTGGTGAGTGTTGTGCCTTTCCCAAAG  1169

Qy        709 GCTCCATTCACCTCTGTTGGCCTTCCTCACCTCAAACGTTTTTTTGAAAGTTTACTTTTTTTTTT  768
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1229 TCTCCGTGCAGTTCTGAC-----TCTTCTCCACTCTTAAACGTGGGTTTCTGAAAGTATTAGCA  1283

Qy        769 ACTTGGGGTTATATTTTTTAGGAATTATGGTCAGTAGACATGAAAAATATACAGTGGAGTCCT  828
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1284 ACTTCAGAATATATTTTTAGAACCAATGAATTAAAAATATAATAACAAAAATGCC-  1342

Qy        829 ATATTAAATAGTCACTTCCACATATTTAAATCAATGATTTTTAACTCTAAAATGAATCATATACAT  888
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1343 --CTATATTTAATAATTCTGCATACTTTAAAATCCAATTAAAGTTATATTTAATTTATATTGATATGCAT  1400

Qy        889 CTGGAGTGATGTCATGGTCATATTAATTATCATTTTTAAAAAGTTGATTATATTCATTAGTCTTAAATAGA  948
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1401 TGAAATATG-----CCTGGTTCATATTTAAAAAATGTAAAAATATATAGTGTT-ATTAGTCTCAAAATAGA  1456
```

```
Qy       1188 AACCCCACAAAAAACAAAAGTCTTAACTTTT--------------------  1214
              |||||||||||||||||||||||||||||||
Db       1685 AATACCACACAAAAACAAAAGCCTTAACTTTGTTGGGACCAAAAATTGTTTAATAATTATATTTTTAA  1744

Qy       1215 ------------------------TGGACCAAAATTTTTATGCCTTTGTTTTTGATGAATTATATTTTT  1256
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1745 TTGATGAATTAAAAAGTATAATATTATTTATTGTGTACAATATGATGTGTTTGAAGTATGTAT  1804

Qy       1257 TAAAATCTTCCTCATTTAGCACCATCTGTGCATTAAAGAGTTTTCTTCAGGTGGTATAGACAC  1316
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1805 ACAATTGCAGAATGGACAATGGACCAAAATTTTTATACCTTGTTCTGTTTATGGTTTTATTTTT  1863

Qy       1317 ATTGAAGAGACCAAAACTGCCCACACGGGAGGGAGGCGTGTGGATAAACTATTTTCCAAAACTTGTCTTTT  1376
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1864 AAAAATTTTCCTCATTTAGCACCACTGTGCACTGAAGATAAACTCTTTCAGGGAATAGGCAC  1923

Qy       1377 AATAAAAGAACACATAGAGCCGCCCAAAAAGTAAGTTGGCATAAAACTTTTAAGT  1436
              |||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1924 ACTGGAGAGTCAAAACTGTGCAAGGGGTACTTGTGGAAACGACTATTCAAAAACTTGTTCCTT  1983

Qy       1437 ATATTTTGTCTGACTCTGCCCTGTTTTTTTTTTTTTTTACAAGAAGTTGACAGTTTTCCTA  1496
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1984 AATAAAAGAAATACAATTGACGGCGCCAAAAAAGTAAGTTACACAACCAATTTTATAGTTTATATT  2043

Qy       1497 CAATATCT----------CCTCTGTTCTTTTACAGAAGATGGTGTCAGGGAGAAGAGATGGGAGAG  1550
              ||||||||          |||||||||||||||||||||||||||||||||||||||||||||||
Db       2044 TGTCCTGGCTG-----TGCCTATTCTGTTTGGAATTGACAGTTTTCCTG  2085

Qy       1551 TGACAAAGTTCCTAGACTACCTGCCAAGTATTGTCGAAGTAATATAAAACACCGAGTGGACAC  1610
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2086 TAATACCTATTGTCATTTTCTTTTTTCACAGAAAAGTGGCATAAGGTAATCCATTTGTGATGTTTGTAAAATTG  2145

Qy       1611 CGGAAAGTTGAGAACAACCGGCCTTATTGTGTAGTGGAAGATTTTGGAG  1657
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db       2146 TAAACCAATTCCTAGAGTACCTGCCGAAGAGTTTTCTTGGGTGTAATGAACACCGAGTGGACAA  2205

Qy       2206 TAGAAGAGTTGAGACTAAACTGGTTTGTTGCAGCCAAAGAGATTTTGGAG  2252
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2206 TAGAAGAGTTGAGACTAAACTGGTTTGTTGCAGCCAAAGAGATTTTGGAG  2252
```

```
RESULT 10
E01640
LOCUS       E01640      3230 bp      DNA      linear      PAT 29-SEP-1997
DEFINITION  gene for human B cell differentiation Factor.
ACCESSION   E01640
VERSION     E01640.1  GI:2169893
KEYWORDS    JP 1988185387-A/2.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 3230)
  AUTHORS   Honshiyo.Y., Takatsu.K. and Eba.S.
  TITLE     HUMAN B CELL DIFFERENTIATION FACTOR
  JOURNAL   Patent: JP 1988185387-A 2 30-JUL-1988;
            HONSHIYO YUU
```

```
COMMENT     OS   Human
            PN   JP 1988185387-A/2
            PD   30-JUL-1988
            PF   21-SEP-1987 JP 1987236842
            PR   20-SEP-1986 JP 86P 223284
            PI   HONSHIYO YUU, TAKATSU KIYOSHI, EBA SEBERINSON PC
            C12N15/00,C07K13/00,C12N5/00,C12P21/02,(C12N5/00,C12R1:91); CC
            strandedness: Double;
            topology: Linear;
            hypothetical: No;
            anti-sense: No;
            *source: tissue_type=fetal liver;
            *source: clone=pdKCR-hIL-5gene;
            *source: clone=pdKCR-hIL-5gene;
            Feature is identified by similarity;
            Key           Location/Qualifiers
```

```
FEATURES             Location/Qualifiers
     source          1..3230
                     /organism="Homo sapiens"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9606"
     5'UTR           509..552
     exon            509..696
     intron          697..904
     exon            905..937
     intron          938..1882
     exon            1883..2011
     intron          2012..2117
     exon            2118..2583
     3'UTR           2217..2583
ORIGIN
```

```
Query Match     36.2%;  Score 600.6;  DB 6;  Length 3230;
Best Local Similarity  67.8%;  Pred. No. 6.9e-99;
Matches 1212; Conservative 0; Mismatches 384; Indels 191; Gaps 19;
```

```
Qy      1 AGGCAAACACTGAAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGTC 60
          ||||| ||| || |||| |||| |||||||| |||| ||| ||||||||| |||| ||||
Db    527 AGGCAAACGCAGAACGTTTCAGAGCCATGAGGATGCTTCGCAATTTGAGTTTGCTAGTC 586

Qy     61 TTGGGGGCTGCCTATGTTTCTGCCCTTTGCGTGTAGAAAAATCCCATGAATAGACTGGTGGGCAG 120
          ||||| ||||||||||||||| || |||| | ||||||| |||||||||||| |||| |||||||
Db    587 TTGGGAGCTGCCTACGTGTCATGCCATCCCCACAGAAATTCCCACAGGTGCATTGGGTGGGAAAG 646

Qy    121 AGACCTTGACACTGCCTCCCACTCATCGAACTTGGCTGCTCGATAGCGGATGGGTAATGTTTCT 180
          ||||| |||| |||| || |||| ||||| ||| ||||| ||||| ||||| || |||||||||
Db    647 AGACCTTGGCACTGCTTTCTACTCATCGAACTCCTGCTGATAGCCAATGAGGTAATTTTCT 706

Qy    181 TTTTGATTCCTACAGTCTTTAAAATGCATGGGTAATTGGTGTGTGTGCTAGTT----- 234
          |||||| || ||||||||| |||| ||||| |||| |||| || ||||||||
Db    707 TTATGATTCCTACAGTCTGTAAAGTGCATAGGTAATCATTTTGTGATGGTTTCCTTACTAT 766

Qy    235 -TTTAAAGATCCATTATCAAATAATGAAGTAATGAAGTTAATATAATGGGTACC 293
          |||| | |||| ||||| ||| ||| ||||||||| |||| ||||| |||||||
Db    767 ATATAGAGATCTGTTTATAAAATGAATGTTTTAAAATTCTGAG-CACATTAGTACATTAAAAATGAAT 825

Qy    294 ATGTTACTCAGAAGAATTATATATAGTTATATTTATGAACTTACAATACATTAAAAATGAATG 353
          | | | || ||||| |||| |||| ||||||||||||||| ||||||||||| || |||||||
Db    826 ACATCACCAGCAAACATTCGTTAATGAAAGTTATGAAATGGCTGGTGTCTGTAAAAATGATTG 885

Qy    354 TTGTTTCCTTTCTTTTTTCTGAGACCTGATGATTCCTACTCCCTGAAAATAAAAAATGTAAGTT 413
          |||||||||| || ||| |||||| ||||| |||||||| ||||| | |||||| ||| || |
Db    886 -TATTTCCTTTCCTCTCCCAGACTCTGAGGATTCCTGTTCCTGTACATAAAAAGTGTAAGTT 944

Qy    414 AAATTATGAATTTGATAAAATGATTACATGAAGAATCAG----TTTCATATTTTAAGCTATAAA 469
          |||| | || ||||||||| ||||||||| ||||||||| |||||||||| |||||||||||
Db    945 AAATTATGAATTCAGTGAATTGGCATGAATTAAGTAAATTAAAATTCATATTTTAAGCTATAAA 1004

Qy    470 GTATCAGTTAACATTGGGATGATTTAATTTAATCTATTTGTTTTTATGTGTCGGGATGT 529
          || || ||||||| ||||||||| ||||||||||| |||||| ||||| ||||||| |
Db   1005 TCATTAGTTATCATTGGAACTATTTAATTTTCTATATTTGTTTTTCATATGGGTGGGCTGT 1064

Qy    530 AAAT-TATGTGCTTATGAATATTAGGAATGGCTCTACAAATATTAAGTA 588
```

```
Db   1065 GGAATGTCTGTACTTATAAATATGAGGAATGACTTT------------------      1109
           ||||||||||||||||||||||||||||||||||||                    ||||||||||
Qy    589 GAAATCCCATTAAGCAAGTGGGATCAGCGCCCTTTTTTGATGTTGTCAGTTCTCCATTCAAAG    648
Db   1110 GAATCCTTTAAACAAGTGGATTAGGCTCTTTGGGTGATGTTGTTAGTTGCCTTCCCAAAG   1169
Qy   1284 ACTCAGAATTATATTTTAGAACCATGATCAGTAGACATATTAAAATATTAACAAATGCC-   1342
...
```

```
Query Match             36.2%;   Score 600.6;  DB 6;  Length 3230;
Best Local Similarity   67.8%;   Pred. No. 6.9e-99;  Indels 191;  Gaps 19;
Matches 1212;  Conservative   0;  Mismatches 384;
```

```
Db    1065 GCTCCATTCACCTCTGCTGCGTTGGCTTTCCTCACCCTCAAGTGTTTTCTGAAAGTACTTT
            ||| |||| || |||||||| |                              ||| |||||
Qy    1551 ---------------------------------------------------TTATCAAGTA 1109

Db    2086 TAATACCTATTGTCATTTTCTTTTTTCTTTTTTCACAGAAAAAGTGTGGAGAAGAAGACGGAGGAG 2145
```

(sequence alignment block — Qy/Db paired reads)

RESULT 12

LOCUS HSBCDIFFI 3230 bp DNA linear PRI 30-MAR-1992
DEFINITION H.sapiens gene for B cell differentiation factor I.
ACCESSION X12706
VERSION X12706.1 GI:29392
KEYWORDS B-cell differentiation factor.
SOURCE Homo sapiens (human)
ORGANISM Homo sapiens
  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
  Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE 1 (bases 1 to 3230)
AUTHORS Honjo,T., Takatu,K. and Severinson,E.
JOURNAL Unpublished
COMMENT see X12705 for ph.IL-5-30 cDNA sequence;
  extent of mRNA is given according ph.IL-5-30 cDNA.; Data kindly
  supplied by Derwent Biotechnology Abstracts: Patent (EP_0_261_625,
  20.09.86_JP_223284/86), T. Honjo.
FEATURES Location/Qualifiers
 source 1..3230
  /organism="Homo sapiens"
  /mol_type="genomic DNA"
  /db_xref="taxon:9606"
  /clone="lambda 12, lambda 22, lambda 38"
  /clone_lib="Charon 4A"
 mRNA join(553..696,905..937,1883..2011,2118..2216)
  /note="B cell differentiation factor I"
  /product="B cell differentiation factor I"
 CDS join(553..696,905..937,1883..2011,2118..2216)
  /codon_start=1
  /product="B cell differentiation factor I"
  /protein_id="CAA31211.1"
  /db_xref="GI:29393"
  /db_xref="GOA:P05113"
  /db_xref="UniProt/Swiss-Prot:P05113"
  /translation="MRMLLHLSLIALGAVVYAIPTEIPTSALVKETLALLSTHRTLL
  IANETLRIPVPVHKNHQLCTEBIFQGIGTLESQTVQGGTVERLFKNLSLIKKYIDGQK
  KKCGEERRRVNQFLDYLQEFLGVMNTEWIIES"
 sig_peptide 553..609
  /note="B cell differentiation factor I"
 mat_peptide join(610..696,905..937,1883..2011,2118..2213)
  /product="B cell differentiation factor I"
 exon 553..696
  /number=1
 intron 697..904
  /number=1
 exon 905..937
  /number=2
 intron 938..1882
  /number=2
 exon 1883..2011
  /number=3
 intron 2012..2117
  /number=3
 exon 2118..2216
  /number=4
 polyA_site 2583
ORIGIN

Query Match 36.2%; Score 600.6; DB 9; Length 3230;
Best Local Similarity 67.8%; Pred. No. 6.9e-99;
Matches 1212; Conservative 0; Mismatches 384; Indels 191; Gaps 19;

```
Qy      1 AGGCAAACACTGAACATTTCAGAGCTTATAGAGAATGCTTCTGAAATTTGAGTTTGCTAGCTC 60
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    527 AGGGCAAACCGAGAAACGGTTCAGAGCCATGAGGAGATGCTTCTGAAATTTGAGTTTGCTAGCTC 586

Qy     61 TTTGGGGCTGCCTATGTTCTCTCCCTTTGCTGTGTGAGAAAATCCCATGAATAGACTGGGTGGCAG 120
Db    587 TTGGAGCTGCCTACGTGTATGCCATCACCCCACAGAAATTCCCACAAGTGCATTGGGAAAG 646

Qy    121 AGACCTTGACACTGCTTCTCCACTCATCATCACTGCCTGACTGGCCGGATGGGGGTAATTTTCT 180
Db    647 AGACCCTTGGCACTGCCTTTTCCTATCATGGAACTCTGCTGTGATGAGGTAATTTTCT 706

Qy    181 TTTTGCATTCCTTACTACCAGTGTTTAAAAATGCATGGGGTAATTGGGTTGGTGGTTAGCTT 234
Db    707 TTATCAGTTCCTACACAGTCTGTAAAAGTGCATAGGATGCTATTATCATTGTTCCTTACTAT 766

Qy    235 TTTAAAGATCCATTATCAATAATGAAGTAATGAGTGTTAATAATATATAAGGGTAACC 293
Db    767 ATATAGAGATCTGTTATAAAATAATAAGATCTGAG CACATTAGTACACATGGTGATAACT 825

Qy    294 ATGTTACTCAGAAAGAATTATTATTAAAAGTATGAACCTTACAAATACATTAAAAATGAATG 353
Db    826 ACATCACCAGCAAAACATTCTGTTAAAAGTTATGAAGCTCGGTGTGTGTAAAATGATTG 885

Qy    354 TTGTTCCTTTCTTTTCAGAACCTGATGAATCCTACTCCTGAAAATAAAATCAAAGTT 413
Db    886 TATTTCCTTTCTTCCTCTGTACATAAAAAATGAAGT 944

Qy    414 AAAATTATGATTTGATAAAATGATTACACATGAATCAG TTTCATATTTAAAGCTATAAA 469
Db    945 AAATTATTGAATTCAGTAAAAATGGCATGAATAAGTA ATTTCATGGTGGTAAA 1004

Qy    470 GTATCAGTTTAACATTGGGAGGATTTTTTATCTATTTTTGTTTTTATGTGTGCGGATGT 529
Db   1005 TCATTAGTTATTCATTGGAACTATTTAATTTTGTTTTTCAGAAAATATCAAAATAAAATGATAACTTTGAAAGTATTAGCAA 1064

Qy    530 AAAT-TAATGTTGCTTATGAATATTAGGAATGGCTTCTACAAATATTAAGTA 588
Db   1065 GAAGTGTCTGTACTTAATAAAAATGAGGAATGACTTT------TTATCAAGTA 1109

Qy    589 GAATCCATTAAGCAAGTACGATCAGGCCCCTTTTTTGGGTTGTCAGTTCTCCATCTCAAAG 648
Db   1110 GAATCCTTTAAACAAGATGGCTCTTGGGTTGTTAGTTGTTGCCTTCCCAAAG 1169

Qy    649 AGCCTGCTGGTAGGGCATTCTTCTTCCTCAAACACGTTTTCTGAAAGTATTAGCA 708
Db   1170 AGCATCGTGTCAGG-AATCTTTCCAGGAGGATTCCACACTGAGTGAGAAGTGCGGCTAG 1228

Qy    709 GCTCCAATTCACCTCTGTGGTTGGGCTTCCTCACCTCAAACGTTTTCTGAAAGTACTAGCA 768
Db   1229 TCTCCGTGCAGTTCCTGAC----- TCTTTCCCACTCTGTTTCTGAAAGTATTAGCA 1283

Qy    769 ACTTGGGGTTGTATAATTTTTAGAATTATGGTCAGTAGACATGAAAAATATACAGTGAAGTCCT 828
Db   1284 ACTCAGAATATAATATTTTTAGAACCATGATCAGTAGCACATTAAAAATATATAACAAATGCC- 1342

Qy    829 ATATTAAAATTACCAGCTAGAAACTATACGAGGAAATTCTGAGGTGAGGTAAATCAGTAAGGCA 888
Db   1343 --CTATATTAATAAATCTGCACTACTTAAAATAATATGACATATATGAGTGTGTATGCAT 1400

Qy    889 CTGGAGTAGTGCATCGTCATAATTATTTAAAAGTTGATATCATCATTAGTCTAAATAGA 948
Db   1401 TGAAATATG---CCTGGTCATATTAAAAATGTAAAAATATATAGTTT-ATTAGTCTAAATAGA 1456

Qy    949 ATAAAAATTACCAGCTAGAACTATACGAGGAAATTCTGAGGTGAGGTAAATCAGTAAGGCA 1008
Db   1457 ATAAAACTACCAGCTAGAACTGTAGAAACACAT--TGATATGAGTTTAATGTATAATGC- 1513

Qy   1009 GTTGTATTATACCTCGTAAGCATTTATTTTTCATTAAATAATCATTCATTTATATATCATTGTA 1068
Db   1514 -----ATTACACTTCCAAAACATTTTTTCCAGTTACATAATAATTAAGTTATATCCTTTATA 1568

Qy   1069 ACACTTCTCAGTAATTATATATAAACATCATTTAC-TTATGGTAATTAATTATAGCTTAGTATAAG 1127
Db   1069 ... (continued)
```

```
                /mol_type="genomic DNA"
                /db_xref="taxon:9606"
                /chromosome="5"
                /map="1589 bp upstream of HindIII site; 5q23.3-q32"
                /clone="lambda-[12,22,38]"
                /cell_line="myeloma cell line 266B1"
                /tissue_type="fetal liver, placenta, and myeloma cells"
prim_transcript  509..2583
                /gene="IL5"
                /note="IL5 mRNA and introns"
gene             553..2216
                /gene="IL5"
CDS              join(553..696,905..937,1883..2011,2118..2216)
                /gene="IL5"
                /codon_start=1
                /product="interleukin 5"
                /protein_id="AAA74469.1"
                /db_xref="GI:386822"
                /translation="MRMLLHLSLLALGAAYVYAIPTEIPTSALVKETLALLSTHRTLL
                IANETLRIPVPVHKNHQLCTEEIFQGIGTLESQTVQGGTVERLFKNLSLIKKYIDGQK
                KKCGEERRVNQFLDYLQEFLGVWNTEWIIES"
exon             <553..696
                /gene="IL5"
                /number=1
intron           697..904
                /gene="IL5"
                /note="IL5 intron A"
exon             905..937
                /gene="IL5"
                /number=2
intron           938..1882
                /gene="IL5"
                /note="IL5 intron B"
exon             1883..2011
                /gene="IL5"
                /number=3
intron           2012..2117
                /gene="IL5"
                /note="IL5 intron C"
exon             2118..2216
                /gene="IL5"
                /number=4
ORIGIN

Query Match        36.2%;  Score 600.6;  DB 9;  Length 3230;
Best Local Similarity  67.8%;  Pred. No. 6.9e-99;
Matches 1212;  Conservative  0;  Mismatches 384;  Indels 191;  Gaps 19;
```

```
Qy     1 AGGCAAAACACTGAACATTCAGAGCTATGAGAAATGCTTCTCGAATTTGAGTTTGCTAGCTC    60
         |||||||||        | |||||||||||| |||| ||||||| ||||||||||||||||||
Db   527 AGGCAAAACGCAGAAGCGTTTCAGAGCGATGGAATGCTTCTCCGAATTTGAGTTTGCTAGCTC   586

Qy    61 TTGGGGGCCTGCCTATGTTTCTGCCTTTGCTGTTAGAAAATCCCATGATAGACTGGTGGCAG   120
         |||||  ||||||       |||||||||||||||||    |||   |||||||||| |||||
Db   587 TTGGAGCTGCCTACGTGTATGCCATCCCCACAGAAATCCCACAAGTGCATTGGGTGAAAG    646

Qy   121 AGACCTTGACACTGCTCTCCACTCATCGAACTGGCGTGATAGGCGATGGGGGTAATTTCT     180
         |||||||      ||||| ||||   ||||||||||| |||||  |||||| |||||||||
Db   647 AGACCTTGGCACTGCTTCTACTCATCGAACTCTGCTGATAGCCAATGAGGTAATTTTTCT   706

Qy   181 TTTTGATTCCTACACGTCTTTAAAATGCATGGGTAATTGGTGGTGGTGGGCTAGTT---    234
         |||||||||||                |||| ||||||||||||||||||||||||
Db   707 TTATGATTCCTACAGTCGTAAAAGTGCATAGGTAATCATTGTGATGGTTCCTTTACTAT   766

Qy   235 -TTTAAAGATCCATTATCAATAATGAAGTAATGAGTGTTAATACAATTATATAATGGGTAACC    293
          |||  |||||||         ||||||||   ||||||||||||||||||||||||
Db   767 ATATAGAGATCTGTTATAAAAATAAAGAATTCTGAG-CACATTAGTACATCGGTGGTGATAACT   825

Qy   294 ATGTTACTCAGAAGAATTATATAAAAAGTTAATGTATGAAGCTATATATGAAAATGAATG    353
         |  |||               |||||||||||||        ||||| |||||||||||
Db   826 ACATCACCAGCAAAACATTCTGTTAAAAAGTTATGATGAATCGTCTGGTCTGTAAAAATGATTG   885

Qy   354 TTGTTTCCTTTCTTTTTCAGAACCTGATGATTCCTACTCCTGAAAAATAAAAATGTAAGTT    413
         |  |||         |||||||||||||||||
Db   826 ...

Db   886 -TATTTCCTTTCCTCTCCAGAACTCTGAGGATTCCTGCTGTTCCTGTACAATAAAATGTAAG    944
          |||||||||||     ||||||||||| |||||   ||||||||||||||
Qy   414 AAATTATGATTTGATTAAAATGATTACATGAACCAG-----TTTCATATTTTAAGCTATAAA   469

Db   945 AAATTATGATTGCTCAGTTACTTCAGTGATGGCATGAATAAGTAAATTCCCTGTTTTAAA   1004
         |||||||   |||   | |||||| |||||||       |||||  |||||
Qy   470 GTATCAGTTAACATTGGGATGATGAGTATTAATTTTTATCTATTTTGTTTTTGTGTGTCCGGGATGT   529

Db  1005 TCATTAGTTATCATTGGAACTATTTAATTTTAATTTTCTATTAATTTTGTTTTCATATTGGGTGGCTGT   1064
         ||||||| || ||| |||||||||||   ||| |||| |||||      |||   | ||||| ||||
Qy   530 GAATTCATTAAGCCAAGTGGGATCAGGCGCCCTTTTTTTGGAGTTGTCAGTTGTCAGTTGTCTTCCATCTCAAAG   588

Db  1065 GAATGTCTGTACTTATAAAATATGAGGGAATGACTTT------TTATCAAGTA   1109
         ||| |||  |||      |||||||    ||||||
Qy   589 GAATCATTAAGCCAAGTGGGATCCAGGCCCTTTTTTGAGTTGTCAGTTGTTCAGTTGTCTTCCACTCTCAAAG   648

Db  1110 GAATCCTTTAAACAAGTGGGATTAGGCTCCTTTGGTGAGTTGTTAGTTTTTGCCTTCCCAAAG   1169
         || ||    |||||| |||||  ||| |||||| ||| |||  |||  |  |||||   ||
Qy   649 AGCCTCGTGTCAGGCAATTCTTTCCAAAAGAAATTCCATATTGGGTCAGAGATACTTCCTAG   708

Db  1170 AGCATCGTGTCAGG-ATTCTTTCCAGAAGGATTCCCACTGAGTGAGAGGTCGGTGCTAG   1228
         |||||||||| ||| |||||||||||| | ||||| ||| ||| || | |||| ||||
Qy   709 GCTCCATTCACCTCTGTCGTGCGGCTTTCCTCACCTCAACGTTTTTCTGAAAGTGTA   768

Db  1229 TCTCCGTGCAGTTCTGAC------TCTTTCTCACTCTCCTAACGTCGTTTCTGAAAGTTATTAGCA   1283
         ||  | ||  ||| || |      |||| |  ||||   | ||| |||||||||| |||  |||||
Qy   769 ACTTGCGGGTTATATTTTTTAGAATTATGGTCAGTGAGCAGCATGAAAATATACAGTGAAGTCCT   828

Db  1284 ACTTCAGAATTATATTTTTTAGAACCATGATCAGTGAGACATTAAAATATATAACAAAATGCC-   1342
         |||| |||||||||||||||||| | ||| |||||||    ||||||||||| | |||||
Qy   829 ATATTAATAGTCACTTCCACATATTTAAAATGAATTTAAACTCTAAAATGGAATCAATATACAT   888

Db  1343 --CTATATTAATTAATTCTGCATTACTTTAAAATAGTTAAATAATAATTAATATGATGATCCAT   1400
           |||| | |||||| |||| |   ||||||||||    ||||   | |||||||
Qy   889 CTGGAGTATGTCATTGGTCATATTTATAAAAATGTTAAAAAATGTGATATCATTAGTCTAAAATGA   948

Db  1401 TGAATATG---CCTGGGTCATATTTAAAATGTAAAAATATAAGTTT-ATTAGTCTAAAATAGA   1456
         |||| | |   ||||| |||||||  ||||| |||||||||    | ||| |||||||| |||
Qy   949 ATAAAAATTACAGCTAGAAACTTATACCAGAGGAAATTCTGAGGTGAGGTAAATCAGTAAGGCA   1008

Db  1457 ATAAAAACTACCAGCTAGAACCTGAGAAACACAT--TGATATGAGTTTAATGTATAATCC-   1513
         |||||||| |||| ||||||| |||||  ||| |  ||||||||||||||| || ||||
Qy  1009 GTTGTATTATACCTCGTAAGCATTATTATTTTTCATTAATCATTTCATTTATATCATTGTA   1068

Db  1514 -----ATTACACTTCCAAAACATTTTTTCAAAACATTTATAATACTTAATATCCTTTATA   1568
              || |||||||| ||||| || ||||| || |||  | || || ||  |||||||
Qy  1069 ACACTTCTCAGTAATTATATAAACATCATTTAC-TTATGGTAATTATAAGCTTAGTATAAG   1127

Db  1569 AAACTCCCTTCAGTAATCATTAATTAATAAGCTTCATCTTTTTTGAAAATTTATCTTAATATGTG   1628
         ||| || | ||||||  ||||||||| |   ||  | |||| |||  |   | |||||| ||||
Qy  1128 GTGGGTTTCCCACCTGAAAAAAGACACAAAGTAAAAACCTTCTTCGGAGGAGGGGAACTTGTGTA   1187

Db  1629 GTGGGTTTGTTTGCTAGAA-----ACAAACAAAAAACTCTTTGGAGGAGGGGACTCATGTA   1684
         |||||||||  ||||| ||     | || |  ||||| |||||||||||||||    ||||
Qy  1188 AACCCCACAAAAACAAAGTCTAACTTTT---------------------------     1214
         |||  |||| | |||  |  |||| ||||
Db  1685 AATACCACAAAAACAAAGCCCTAAACTTTGTTGGACCAAAAATTGTTTTAATAATATTTTTTAA   1744

Qy  1215 ----------------------------------------------------------    1214
Db  1745 TTGATGAATTAAAAAGTATATATATATATTATTGTAGCAATATGATGTTTGAAGTATGTAT   1804

Qy  1215 -------------------------------------------------------     1214
Db  1805 ACATTGCAGAATGGACAAATGGACCAAAATTTTATACCTTGTTTTGATGGAATTATTTTTT   1863

Qy  1257 TAAAACTTCCTCATTTAGCACCAACTGTGCATTAAAGAAGAGTTTTCAGGGTATAGACAC   1316
         ||||  ||| |  || |||| | |||||| |||||| || ||  |||  |||  || |||
Db  1864 AAAAAATTTCCTCATTTAGCACCAACTGTGCACTGAGAAATCTTTCAGGGAGTAGGCAC   1923

Qy  1317 ATTGAAGAACCAAAACTGCCCACGGGGAGCCTGGGATAAAACTATTCCAAAAACTTGTCTTT   1376
         ||  | ||||||||  |  ||||| ||||| ||| ||||  |||||| |||  ||| || ||
Db  ....
```

```
RESULT 14

LOCUS       E13592                  3230 bp    DNA    linear    PAT 27-APR-1998
DEFINITION  gDNA encoding beta-cell differentiation factor;BCDF.
ACCESSION   E13592
VERSION     E13592.1  GI:3252397
KEYWORDS    JP 1997215496-A/2.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 3230)
  AUTHORS   Honshiyo,Y., Takatsu,K. and Eba,S.
  TITLE     PRODUCTION OF HUMAN B CELL DIFFERENTIATION FACTOR
  JOURNAL   Patent: JP 1997215496-A 2 19-AUG-1997;
            HONSHIYO YUU
OS          Homo sapiens (human)
PN          JP 1997215496-A/2
PD          19-AUG-1997
PF          21-SEP-1987 JP 1996206192
PR          20-SEP-1986 JP 86P 223284
PI          HONSHIYO YUU, TAKATSU KIYOSHI, EBA SEBERINSON PC
            C12N15/09,A61K38/00,A61K38/00,C07H21/04,C07K14/47, PC
            C12N5/10,
PC          C12P21/02,(C12P21/02,C12R1:91);
CC          strandedness: Double;
CC          topology: Linear;
CC          hypothetical: No;
CC          anti-sense: No;
COMMENT
FH          Key             Location/Qualifiers
FH
FT          source          1..3230
FT                          /organism="Homo sapiens"
FT          5'UTR           1..552
FT          exon            1..696
FT                          /number=1
FT          intron          697..904
FT                          /number=1
FT          exon            905..937
FT                          /number=2
FT          intron          938..1882
FT                          /number=2
FT          exon            1883..2011
FT                          /number=3
FT          intron          2012..2117
FT                          /number=3
FT          exon            2118..3230
FT                          /number=4
FT          CDS             join(553..696,905..937,1883..2011,2118..2216)
FT                          /product="BCDF"
FT          3'UTR           2217..3230.
FT                          2217..3230.

FEATURES             Location/Qualifiers
     source          1..3230
                     /organism="Homo sapiens"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9606"

ORIGIN

Query Match      36.1%;  Score 599;  DB 6;  Length 3230;
Best Local Similarity  67.8%;  Pred. No. 1.3e-98;
Matches 1211;  Conservative  0;  Mismatches 385;  Indels 191;  Gaps 19;
```

(Sequence alignment lines Qy/Db follow)

```
RESULT 15
LOCUS       HUM21DC94Z              3507 bp    DNA     linear   PRI 22-OCT-1995
DEFINITION  Homo sapiens (subclone 6_e5 from P1 H21) DNA sequence.
ACCESSION   L48478
VERSION     L48478.1  GI:1032381
KEYWORDS    interleukin gene cluster.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 3507)
  AUTHORS   Martin,C.H., Bondoc,M.M., Chiang,A., Cloutier,T., Davis,C.A.,
            Ericsson,C.L., Jaklevic,M.A., Kim,R.J., Lee,M.T., Li,M.,
            Mayeda,C.A., Steiert-El Kheir,A. and Palazzolo,M.J.
  TITLE     Sequencing of the interleukin gene cluster of homo sapiens
  JOURNAL   Unpublished (1995)
  COMMENT   Original source text: Homo sapiens (tissue library: Subclones in
            pOT2 from P1 clone H21) DNA.
            This subclone overlaps H21 6_b10 and H21 6_h1.
            Sequence submitted by:
            Human Genome Center
            Lawrence Berkeley Laboratory
            Berkeley, CA 94720
            e-mail: seq@genome.lbl.gov
            The P1, from which this subclone is derived, is adjacent to P1
            (1857) and (5005).
FEATURES             Location/Qualifiers
     source          1..3507
                     /organism="Homo sapiens"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9606"
                     /tissue_lib="Subclones in pOT2 from P1 clone H21"
ORIGIN
Query Match        29.6%;    Score 490.6;  DB 9;   Length 3507;
Best Local Similarity   66.9%;    Pred. No. 5.4e-79;
Matches 1061;  Conservative   0;  Mismatches  339;  Indels  187;  Gaps  18;

Qy   201 AAAATGCATGGGTAATTGGTGGTTGGGTGGGCTAGTT----------TTTAAAGATCCATTATCAA 253
         |||||||||||||| ||||||||||||||| |||||          ||||||||| ||||||||
Db     1 AAAGTGCATAGGTAATTCATTTGTTGATGGTTCCTTTACTATATATAGAGGATCTGTTTATAAA 60

Qy   254 TAATGAAGTAATGAGTGTTTAATATAATATAATGGGTGACCATTGTTACTCAGAAGAATTAT 313
         ||||||||    ||||||||||||||||| |||||||||||||||||||||||||||||||
Db    61 TAATTAAGGAATTCTGAG-CACATTAGTACAATGGGGTGATAACTACACATCACCAGAAACATTCT 119

Qy   314 ATTAAAAGTTATTGAACCTTACAAATACATTAAAAAATGAAATGGTTGTTGTTTCCTTTTTTCAG 373
         |||||||||||||||||||||||| |||||||| |||||| |||||||| ||||||||||||
Db   120 GTTAAAAGTTATGAAATGCTGGGTGTGCGTGTAAAAATGATTGTA-TTTCCTTTCTCTCCAG 178

Qy   374 AACCTGATGATTCCTACTCCTGAAAATAAAATGTAAGTAAATTATGATTTGATAAAT 433
         |||||||||||||||| |||||||||||| ||||||||||| || |||||||||||
Db   179 ACTCTGAGGATTCCTGTTCCTCGTACATAAATAAGTAAGTTAAATTATGGATTCGTTATAA 238

Qy   434 GATTACATGAATCAG-----TTTCATATTTTTAAGCTATAAAAGTATCAGTTAACATTGGGAT 489
         ||||||||||||||      ||||||||| |||||||||||||||| |||||| |||||||
Db   239 GATGGCATGAATAAGTAAAAATTTCCCGTTTTTTAAGCTGTAAATCATTAGTTATCATTGGGAAC 298

Qy   490 GATTTAATTATATCTATTTGTTTTAATGTGTCGGGAGTGTAAAT-TATGTGCATGATGAAT 548
         ||||||| |||||||||||||| |||||||| ||||| ||||| |||||||||||||
Db   299 TATTTAAGTTCTATATTTTGTTTTCATATCGGCTGGTGTGAGAGTCGTACTTATATAAAT 358

Qy   549 ATTAGGAATGGTGTTAGGAAATGGCTCTACAATATTAAGCAAGTGGA 608
         |||||||||| ||||| |||| |||||||||||||||||||| ||||
Db   359 ATGAGGAATGACTTT-----TTATCAAGGTAGAAATCCTTTAAACAAGTGGA 403

Qy   609 TCAGGCCCCTTTTTTGATGTGTTGTCAGTTCTCCATCTCAAAGAGACGCTCGTGTGTCAGGCATTCT 668
         |||||||||||||| ||||| |||||||||||||||||||| |||||||| |||||||||| ||||
Db   404 TTAGGCTTCTTTTGGTTGATGTCTTTTAGTTTGCC--TCCCAAAGAGACATCGTGTCAGGGATTCT 462

Qy   669 TTCCAAAAGAAATTCCATATTGGGGTGCAGAGATACTTCCTAGGGCTCCGTGCAGTTCACTGTCGT 728
         ||||||||||||||||||||||||||| ||||||||| |||||||||| |||||||||||||||
Db   463 TTCCAGAAGGAGATTCCACACTGAGTGAGGAGGTGCGTGTCAGTTCTCCGTGCAGTTCACCTCTGAC-- 520

Qy   729 TGGCTTCCTCACCTCAACGTTTTTCTGAAAGTACTAGGCAACTTGGGGTTATATTTAG 788
         ||||| ||| |||||||||||||||||||||||| ||||||||||||||| ||||||||||
Db   521 ----TCTTCTCACTCTAACGTGTTGTTCTGAAAGTTATTAGCAACTCAGAATTATATTTTAG 577

Qy   789 AATTATGGTCACGTAGACATGAAAATATACAGTGAAGTCCTATATATATTAATAGTCACTTCAC 848
         |||||||||||||||||||||| |||||||||||||||||| |||||||||| |||||||||
Db   578 AACCATGATCACGTAGACATTAAAATATATAACAAAATGCC--CTATAATTAATAAATTCTGC 635

Qy   849 ATATTTAAATGATTTTTAACTCTTAAATGGAATCATATATACCATCTGGACATGTGATGTCATGGTCAT 908
         ||| | ||||||||| |||||||||| |||||||| |||| ||||||||| ||||||||||||||
Db   636 ATACTTAAAATTATTATGACTAATTGATAGGGTGTTGTATCGAATATGTCATTGGGTCAT 695

Qy  1009 GTTGTATTACCTCGTAAGCATTTTATTTTCATTAATCATTCATTATATCATTGTA 1068
         ||||| |||||| |||||||| ||| |||||||||||||||| ||||||||||
Db  1457 ATAAAACTACCAGCTAGAACTGTAGAAACACAT--TGATATGAGTTTAAGTATAATGC- 1513

Qy  1069 ACACTTCTCAGTAATTATAATAAAACATCATTAC--TTATGGTAATTATATAGCTTAGTGTATAAG 1127
         |||||||||||| |||||||| |||||||||||||  ||||||||||||||||| ||||||||
Db  1514 ----ATTACACTTCCAAAACATTTTTT--CCAGTTATCATATAATTAAGTTATATCCTTTATA 1568

Qy  1128 GTGGGTTTCCACCTGAAAAAGACACAAGTAAAAAACTTCTTGTGGAGAAGGGAACTTGTGTA 1187
         |||||||||||||||||||||| |||||| ||||||||||||||| |||||||||||||||
Db  1569 AAACTCCTCAGTAATCATAATAAGCTTCATCTACTTTTTTTTGAAAAATTTTTATCTTAATAGTG 1628

Qy  1188 AACCCCCACAAAAACAAAAGTCTAAACTTTT----------------------- 1214
         |||| |||||||| |||||||||||||||
Db  1629 GTGGGTTTGTTGCCTAGAAA----ACAACAAAAAACTCTTTGGGAGAAGGGGAACTCATGTA 1684

Qy  1215 -----------------------TGGACCAAAATTTTATGCCTTGTTTGTTGATGAATTATATATTT 1256
                                |||||||||||||||||||||||||| ||||||||||||||||
Db  1685 AATACCACACAAAAACAAAAGCCTAACTTTGTTTGGGACCAAAAATTGTTTTAATAATTATATTTTTTAA 1744

Qy  1215 ---------------TTGATGAATTAAAAAAGTATATATTATATATTTGTCACAATATGATGTTTTGAAGTATGTAT 1214
         ||||||||||||||||||
Db  1745 TTGATGAATTAAAAAAGTATATATTATATATTTGTCACAATATGATGTTTTGAAGTATGTAT 1804

Qy  1257 TAAAATCTTCCTCATTTAGCACCAACTGTGCATTAAAGAAGTTTTTTCAGGGTTATAGGACAC 1316
         ||||||||||||| ||||| ||| |||||||| |||||||||||||| |||||||||||||||
Db  1805 ACATTGCAGAATGGACAAATGGACCCAAAATTTTATACCTGTGTCTTGATTGATATTTTGCA-TTTT 1863

Qy  1317 ATTGAAGAACCAAAACTCCCACACGGGAGGAGGCTGTGGGATAAACTATTCCAAAACTGTCTTT 1376
         |||||||||||||||| |||||||||||||||||||||||| ||||||||||||||||||||
Db  1864 AAAAATTTTTCTCATTTAGCACCAACTGTGCACTGAAGAAAATCTTTCAGGGAAATAGGCAC 1923

Qy  1377 AATAAAAAGACACATAGAGAGCCCCAAAAAAGTAAGTAAAGTAAGTTTGGCAAAAAACTTAAGT 1436
         ||||||||| |||||| || |||||| |||||||| |||||||||||| |||||||||| |||
Db  1984 AATAAAGAAATACATTGAGCGGCGCCAAAAAAGTAAGTAAGTTAAGTTAACATTCAATGGAAGCTATATT 2043

Qy  1437 ATATTTGTCTGACTCTGCCCGTGTTTTTTTTTTTACAAGGAATGACAGTTCCTA 1496
         |||||| |||||||||||| |||||||||||||||| ||| ||||||||||||
Db  1924 ACTGGAGCAGTCAAAACTGTTGCAAGGGGGGTACTGTGGGAAAGACTATTCAAAAAAACTTGTTCCTT 1983

Qy  1497 CAATATCT------CCTCTGTTCTTTTAACAGAAAAGGTGTGCAGGAGACAGATGGAGAG 1550
         ||| |||       ||||||||||||||| |||| |||||||||||| |||||||||||
Db  2086 TAATACCTATTGTCATTTTCTTTTTCACAGAAAATGAGAAGAAGACGGAGAG 2145

Qy  1551 TGACAAAGTTCCTAGACTACCTGCGAAGTATATTCTTGGTGTAATAAAACACCGAGTGACAC 1610
         ||||| ||||||||||||||||| || |||||| || |||||| |||||||||| || |||
Db  2146 TAAACCAAATTCCTAGACTCACCTGCAAGAGTTTCTTGGTGTAATGACACCCGAGTGGATAA 2205

Qy  1611 CGGAAAGTTGAGACAAAACCGGCTTATTGTAGTGGGAAGATTTTGGAG 1657
         ||||||||||||||| |||||||||||||| |||||||||||||||||
Db  2206 TAGAAAGTTGAGACTAAAGTGGTTTGTTGCAGCCAAAGATTTTGGAG 2252

Qy  1401 TGAATATG---CCTGGTCATTATAAAATGTAAAATATATAGTTT-ATTAGTGTAAATAGA 1456
         |||||||    |||||||||||||||||||||||||||| |||  ||||||||||||||
Db  2044 TGTCCTGGCTG------------------------------------------------ 2085

Qy   949 ATAAAATTACCAGCTAGAAACTATACGGAGGAAAATTCTGAGGTGAGGTAAATCAGTAAGGCA 1008
         ||||| |||||||||||||||||||||||||| |||||||||||||||| |||||||||||||
Db  1401 ATAAAACTACCAGCTAGAACTGTAGAAACACAT 1456
```

```
Qy    909 ATTAAAATGTTAAAAATGTGTATATCATTAGTCTTAAATAGAATAAAATTACCAGCTAGAAC  968
          ||||||||| || |||||||| ||  || | |||||||||||| || |||||||||||||||
Db    696 ATTAAAATGTAAAATATATAGTTTTATTAGTCTAAATAGAATAAAACTACCAGCTAGAAC  755

Qy    969 TATACGAGAGAAAATTCTGAGGTGAGGTAAATCAGTAAGGCAGTTGTATTATACCTCGTAAG 1028
          || |||| |||||||||  || |||||| |||||||||  ||||||||||||||||||||
Db    756 TGTAGAAACACAT--TGATATGAGTTTAATGTATAAATGC------ATTACACTTCCAAAA  807

Qy   1029 CATTTATTTTTCATTAATCATTTCATTTATATATCATTTGTAACACTTCTCAGTAATTATAT 1088
          ||||||||   || |||||||| ||||| ||||||| |||| ||| ||||||||||||||
Db    808 CATTTTTTTCCAGTTACATAATTAAGTTATATATCCTTTATAAAACTCCTCAGTAATCATAT  867

Qy   1089 AAACATCATTTACTTATGGT-AATTATAGCTTAGTATATAAGGTGGTTTCCACCTGGAAAA 1147
          || |||| |||||||||||| |||| |||  | | ||||| ||||||||||||||| ||||
Db    868 AAGCTTCATCTACTTTTTGAAAAATTTATCTTAATATGTGGTGTTTTGTTGGCCTAGAAA-  926

Qy   1148 GACACAAGTAAAAACCTCTTGGGGAGAAGGGAACTTGTGTAAAACCCCACAAAAACAAAGTCT 1207
          |  || |||||   ||||||||||| || || ||||||  || |||||||||||||||
Db    927 ---ACAAACAAAAAAACTCTTTGGGGAGAAGGGAACTCATGTAAAATACCACAAAAACAAAGCCT  983

Qy   1208 AACTTT--------------------------------------------------------- 1213
          |||||||
Db    984 AACTTTGTGGACCAAAAATTGTTTAATAATTATTTTTAATTGATGAATTAAAAAGTATA 1043

Qy   1214 ------------------------------------------------------TTG 1216
                                                                 |||
Db   1044 TATATTTATTGTGTACAATATGATGTTTTGAAGTATGTATACATTGCAGAATGGACAAATG 1103

Qy   1217 GACCAAAATTTTTATGCCCTTGCTTTTTGATGAATTATATTTTTTTAAAATCTTCCTCATTTAGC 1276
          || |||||||||| || |||||||| |||| ||||| | |||||||||||| || |||||||||
Db   1104 GACCAAAATTTTTATACCTTGTCTTGATTATTTTGCA-TTTTTAAAAATTTTCCTCATTTAGC 1162

Qy   1277 ACCAACTGTGCATTAAAGAGAGTTTTTCAGGGTGTATAGACACATTGAAGAACCAAACTGCCC 1336
          ||||||||||||| |||| |||||||||||| ||| |||| || ||| |||||||||||||||
Db   1163 ACCAACTGTGGCACTGAAGAAATCTTTCAGGGAATAGGCACTGGAGAGTCAAAACTGTGC 1222

Qy   1337 ACGGGGAGGCTGCTGTGGATAAACTATTCCAAAACTTGTCTTTTAATAAAAGAGACACATAGAGC 1396
          ||||||| || ||||||||||||||| | ||||||| ||| |||||| ||||||||||||||
Db   1223 AAGGGGGTACTGTGGGAAAAGACTATTCAAAAAAACTTGTCCTTAATAAAAATACATTGACG 1282

Qy   1397 GCCAAAAAGTAAGTTAAAGACATTGGCAAAAACTTAAGTATAATATTTGTTCTGACTCTGCCT 1456
          |||||||||||||| ||  | |||| || ||||||||  ||||| |||||  ||||||||||||
Db   1283 GCCAAAAAGTAAGTTACACACATT------CAATGGAAGCTATATTTTGTCTGGCTGTGCCT 1337

Qy   1457 GTTTTTTTTTTTTTTTTTTTTACAAGAATTGACAGTTTCCTACAATATCT------CCTCTG 1510
          |||||||||||||||||||||
Db   1338 ATTTCTAT-----------GGAATTGACAGTTTCCCTGTAATACCTATTGTCATTTTT 1383

Qy   1511 TTCTTTTAACAGAAAAAGGTGTTGCAGGAGAAAGATGGAGAAAGTTCCTAGACTAC 1570
          || ||||| ||||||||| ||  |||||||||| || || |||||| |||||||||
Db   1384 CTTTTTTCACAGAAAAAGTGTGGAGAAGAAAGACGGAGAGTAAAACCAATTCCTAGACTAC 1443

Qy   1571 CTGCAAGTATTTCTTGGTGTAATAAACACCGGAAGTGGACACCGGAAAGTTGAGAACAAAACC 1630
          |||||||| ||||| || ||| |  || |||| || | |  || ||| |||| || |||||
Db   1444 CTGCAAGAGTTTCTTGGTGTAATGAACACCGAGTGATAATAGAAGGTTGAGACTAAAACT 1503

Qy   1631 GGCTTATTGTGAGTGGGAAGAGATTTTGGAG 1657
          ||||||||||||||||||||||||||||||
Db   1504 GGTTTGTTGCAGCCAAAGAGATTTTGGAG 1530
```

OM nucleic - nucleic search, using sw model

Copyright (c) 1993 - 2005 Compugen Ltd.

GenCore version 5.1.6

Run on: August 7, 2005, 19:25:03 ; Search time 1111.38 Seconds
(without alignments)
8831.282 Million cell updates/sec

Title: US-10-787-382-18
Perfect score: 1658
Sequence: 1 aggcaaacactgaacattc............gtagtggaagattctggaga 1658

Scoring table: IDENTITY NUC
                Gapop 10_0 , Gapext 1.0
Searched: 4390206 seqs, 295987067 residues
Total number of hits satisfying chosen parameters: 8780412
Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
                 Maximum Match 100%
                 Listing first 45 summaries

Database : N_Geneseq_16Dec04:*
1: geneseqn1980s:*
2: geneseqn1990s:*
3: geneseqn2000s:*
4: geneseqn2001as:*
5: geneseqn2001bs:*
6: geneseqn2002as:*
7: geneseqn2002bs:*
8: geneseqn2003as:*
9: geneseqn2003bs:*
10: geneseqn2003cs:*
11: geneseqn2003ds:*
12: geneseqn2004as:*
13: geneseqn2004bs:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Match	Query Length	DB	ID	Description
1	634.6	38.3	3241	3	AAA34856	Aaa34856 Human ade
2	634.6	38.3	3241	3	AAF20978	Aaf20978 Human low
3	634.6	38.3	3241	10	ABZ96672	Abz96672 Human nuc
4	634.6	38.3	4057	3	AAA34858	Aaa34858 Human ade
5	634.6	38.3	4057	10	AAF20980	Aaf20980 Human low
6	634.6	38.3	4057	11	ABZ96674	Abz96674 Human nuc
7	634.6	38.3	4057	10	ABD20523	Abd20523 Human pul
8	634.6	38.3	4057	11	ABD20522	Abd20522 Human pul
9	634.6	38.3	9738	6	AAS15002	Aas15002 DNA encod
10	634.6	38.3	3230	6	AAN81381	Aan81381 Entire nu
11	600.6	36.2	3230	2	AAQ74056	Aaq74056 Human int
12	600.6	36.2	3230	8	AAC73725	Aac73725 Human Il-
13	600.6	36.2	3230	8	ABX04379	Abx04379 Human Int
14	600.6	36.2	3230	12	ADN12146	Adn12146 Interleuk
15	600.6	36.2	3230	12	ADR12056	Adr12056 Human int
16	272.6	16.4	700	4	AAH92592	Aah92592 Human inf
17	221.6	13.4	700	4	AAH92594	Aah92594 Human inf
18	216	13.0	700	4	AAH92591	Aah92591 Human inf
19	215.4	13.0	700	4	AAH92593	Aah92593 Human inf
20	205.2	12.4	1395	1	AAN71243	Aan71243 Sequence
21	171.8	10.4	610	3	AAZ55546	Aaz55546 Canine in
22	171.8	10.4	610	3	AAZ55547	Aaz55547 Canine in
23	150.6	9.1	5397	6	ABL33044	Abl33044 Human imm
24	149.4	9.0	838	3	AAZ44265	Aaz44265 Porcine I
25	145.8	8.8	252	4	AAF74305	Aaf74305 Canine in
26	145.8	8.8	402	3	AAZ55548	Aaz55548 Canine in
27	145.8	8.8	402	3	AAZ55549	Aaz55549 Canine in
28	145.8	8.8	405	4	AAF74300	Aaf74300 Canine in
29	138.2	8.3	405	2	AAT50755	Aat50755 Ovine IL-
30	134.6	8.1	520	2	ABL33045	Abl33045 Human imm
31	131.6	7.9	345	3	AAZ55551	Aaz55551 Canine ma
32	131.6	7.9	345	3	AAZ55550	Aaz55550 Canine ma
33	131.6	7.9	393	4	AAF74306	Aaf74306 Canine in
34	117.4	7.1	385	3	AAA43842	Aaa43842 Human sec
35	117.4	7.1	816	3	AAA34857	Aaa34857 Human ade
36	117.4	7.1	816	3	AAA13338	Aaa13338 Human int
37	117.4	7.1	816	3	AAF20979	Aaf20979 Human low
38	117.4	7.1	816	10	ADG33104	Adg33104 Human DNA
39	117.4	7.1	816	10	ABZ96673	Abz96673 Human nuc
40	117.4	7.1	816	11	ACF63368	Acf63368 Human int
41	117.4	7.1	816	13	ADI31910	Adi31910 Human CDN
42	117.4	7.1	816	13	ADP56009	Adp56009 Human PRO
43	112.6	6.8	399	2	AAT50756	Aat50756 Ovine IL-
44	108	6.5	6727	2	AAT88014	Aat88014 Murine IL
45	108	6.5	6727	3	AAC73648	Aac73648 Murine IL

ALIGNMENTS

RESULT 1
AAA34856

ID   AAA34856 standard; DNA; 3241 BP.
XX
AC   AAA34856;
XX
DT   28-JUL-2000 (first entry)
XX
DE   Human adenosine receptor related polynucleotide SEQ ID NO:2545.
XX
KW   Human; adenosine receptor; low adenosine antisense oligonucleotide;
KW   phosphorothioate; impaired respiration; inflammation; allergy;
KW   allergic disease; bronchoconstriction; inhibitor; antiinflammatory;
KW   antiallergic; antiasthmatic; cyrostatic; analgesic; impaired airway;
KW   lung disease; ischaemic condition; pulmonary vasoconstriction; asthma;
KW   respiratory distress syndrome; pain; cystic fibrosis; emphysema;
KW   pulmonary hypertension; chronic obstructive pulmonary disease; COPD;
KW   cancer; leukaemia; lymphoma; carcinoma; metastasis; ss.
XX
OS   Homo sapiens.
XX
PN   WO200009525-A2.
XX
PD   24-FEB-2000.
XX
PF   03-AUG-1999; 99WO-US017712.
XX
PR   03-AUG-1998; 98US-0095212P.
XX
PA   (UYEC-) UNIV EAST CAROLINA.
XX
PI   Nyce JW;
XX
DR   WPI; 2000-205971/18.
XX
PT   New antisense oligonucleotides useful for treating e.g. pulmonary
PT   vasoconstriction, inflammation, allergies, asthma, hypertension,
PT   bronchitis, emphysema, respiratory distress syndrome, ischemia or
PT   cancers.
XX
PS   Disclosure; Page 715-716; 1343pp; English.
XX
CC   The present invention describes a new composition comprising an antisense

```
CC  oligonucleotide (ON) with low adenosine (up to 15%), which targets
CC  nucleic acids involved in bronchoconstriction, allergies, and/or
CC  inflammation. The ON can have antiinflammatory, antiallergic,
CC  antiasthmatic, cytostatic and analgesic activities. The compositions are
CC  useful for the treatment of diseases associated with inflammation,
CC  impaired airways, including lung disease and diseases whose secondary
CC  effects afflict the lungs of a subject. They can be used for treating
CC  e.g. ischaemic conditions, pulmonary vasoconstriction, allergies, asthma,
CC  impeded respiration, respiratory distress syndrome, pain, cystic
CC  fibrosis, pulmonary hypertension, emphysema, chronic obstructive
CC  pulmonary disease (COPD), and cancers such as leukaemias, lymphomas,
CC  carcinomas, and cancers which may metastasise to the lungs, including
CC  breast and prostate cancer. The reduction of the adenosine content of the
CC  ONs reduces side effects. The A-containing ONs break down with the
CC  release of deoxyadenosine which activates adenosine receptors causing
CC  bronchoconstriction and inflammation. AAA32313 to AAA35312 represent the
CC  nucleotide sequences given in the sequence listing from the present
CC  invention, which correspond to SEQ ID NO:1 to 2815, and then the last 185
CC  sequences are also called SEQ ID NO:1 to 185, but the sequences differ
CC  from the previously named sequences. SEQ ID NO:11 to 1680 (AAA32323 to
CC  AAA33992) are specifically claimed ONs from the present invention. N.B.
CC  Sequences given in the disclosure of the present invention do not match
CC  up with their corresponding SEQ ID NO: sequences given in the sequence
CC  listing
XX
SQ  Sequence 3241 BP; 1026 A; 546 C; 632 G; 1037 T; 0 U; 0 Other;

Query Match  38.3%;  Score 634.6;  DB 3;  Length 3241;
Best Local Similarity  68.6%;  Pred. No. 1.5e-115;
Matches 1226;  Conservative 0;  Mismatches 374;  Indels 187;  Gaps 18;

Qy      1 AGGCAAACACTGAACATTCAGAGCTATGAGAATGCTTCTTCGAATTTGAGTTTGCTAGCTC    60
          |||||| | |  | ||||||||  ||||||| || |||||||||| ||||||||| |||||||
Db    526 AGGCAAAACGCAGAGAACGTTTCAGAGCCATGAGGATGCTTCTGCGAATTTGAGTTGCTAGCTC   585

Qy     61 TTGGGAGCTGCCTACGTGTATGCCATCCCACAGAAATTCCCACAAGTGCATTGGGTGAAAG   120
          ||| |  ||| ||| | |||  |||||||||||||   ||||||   ||||||  || ||||
Db    586 TTGGAGCTGCCTACCGTGTATGCCATCCCACAGAAATTCCCACAAGTGCATTGGGTGAAAG   645

Qy    121 AGACCTTGACACTGCTCTCCACTCATCGACTTGGCTGATAGGCCGATGGGGGTAATTTTCT   180
          ||| ||||| ||||| ||| |||||| |||||| |||| ||| |||  |  | |||| |||
Db    646 AGACCTTGGCGACTGCTTTCCTACTCGTCGACCTCGGCTGTGCTGTGAAATGCAATGAGGTAATTTTCT   705

Qy    181 TTTTGATTCCTACAGTCGTTTAAAATCCATGGGTAATTGGTTGGTGGGCTAGTT------   234
          |||| ||| || || ||| ||||| || ||| || |||| |||| |||   ||||
Db    706 TTATGATTCCTACAGTCTGTAAAGTGCATAGGGTAATCATTGTGAGGTTCCTTTACTAT   765

Qy    235 -TTTAAAGATCCATATTCAATAATGAAGTAATGACTGGTTAATAATGAATGGGTAACC   293
           ||||| ||| ||||| |||| |||| || ||| ||  |  |||| ||| ||| ||
Db    766 ATATAGAGATCTGTTTATAATAATAAGATCTGAG-CACATTAGTACATGGGTGATAACT   824

Qy    294 ATGTTACTCAGAAAGAATTATATTAGGATTATTAGAACCTTACAAATACATTAAAAATGAAATG   353
          || ||||||| ||||| || ||| ||||| |||||  |||||||||| |||| |||| ||||
Db    825 ACATCACCAGCAAAACATTCTGTTAAAAAGTTATGGAATGCTCGGGTGTGCTGTGAAAAATGATTG   884

Qy    354 TTGTTTCCTTCTTTTTTCAGAACCTGATGAATTCCTACTCCTGGAAATATAAAAATGTAAGTT   413
          || ||||| ||||| ||||  ||||| |||| ||||||  | |||  |||||  | || ||||
Db    885 -TATTTCCTTCTTCCTCCAGACTTACGTGTTTCCTGTTCCTGTACATAATGGGTGCTGT   943

Qy    414 AAAATTATGATTTGATAAAATGATTAACATTGACATGAATCAGT----TTCATATTTAAGCTATAAA   469
          |||| |||| || ||| || |||| ||| || |  ||||| |||     | || ||||  || |||
Db    944 AAAATATGATTCAGTAAAATGGCATGAATGAGTAAATTCCTTGAATTTTGCAATTGCAAGTTA  1003

Qy    470 GTATCAGTTAACATTGGGATGGATGAATTTAATTTATTGTGTTAGGAATGGCTCTACATTTAAGTA   529
          || ||||| ||| ||||| || ||||||||| ||  || |||| || || |||| || |||
Db   1004 TCATTAGTTATCAATTGGAACTATTAATTTAATTTTCTATATTTTTGTTTTCAATATTTAAGTA  1063

Qy    530 AAAT-TATGTGCCTATGAAATTTAGGAATCGGTTGTTAGGAATGGCTCTACAATATTAAGTA   588
          |||  | || || ||||||  || |||||   || ||  |  ||  |||||| |||| ||
Db   1064 GAATGTCTGTACTTATAAAATATGAGGAATGACTTT-  1108

Qy    589 GAATCCATTAAGCAAGTGGATCAGGCGCCTTTTTTTGATGTTGTCAGTTCCCATCTCAAAG   648
          ||||| ||||| ||  ||  | |  |  | | | |  | |||| |||  ||||| | |||
Db    648 TAAACCAAATTCCTAGACTACCTGCAAGTA-----  ...

Db   1109 GAATCCTTTAAACACTGGAATTAGGCTCTTTGGTGATGTTGTTAGTT-TGCTTCCCAAAG  1167
Qy    649 AGCCTCGTGTCAGGCGCCATTCCTTCTTCCAAAAGGAATTCCATATTGGGTCAGAGTACTTCCTAG   708
          |  ||  |||  | | |||| | | | | |||||||||| ||||| |||| || |||  || ||
Db   1168 AGCATGCGTGTTCAGGGGATTTCTTTCCAGAAGGAATTCCACACTGAGATTGAGAGGTGCTGCTAG  1227

Qy    709 GCTCCATTCACCTCTGTCGGTTGGCTTTCCTCACCTCAAACGTTTTTTGGTTACTTAGGCA   768
          ||| |||||| | | |  ||||||| || |  | |  ||||||||||||||| ||  |||
Db   1228 TCTCCCGTGCAGTTCCGAC-----TCTTCTCCACTTAAGCTCCAGGAATTCCACAGTGTCCT  1282

Qy    769 ACTTGGGGTTGTATATTTTTAGGAATTATGGTCAGTGGAGAAAATATACAGTGAAGTGCCT   828
          |||  ||| |||||| || |||| || |||||| || ||||||||| | |||| || |  |
Db   1283 ACTCAGAATATAATTTTTTTAGAACCATGAGTCAGTAGACCATTAAAAATATAACAAAAATGCC-  1341

Qy    829 ATATTAATAGTCACTTCCACATATTTAAATGATTTTTAACTCTAATGGAATCATATACAT   888
          | | |||| |  |  |||| | || |||||||| |||| ||| ||| | ||  ||| ||
Db   1342 -CTATTAATAATTTCTGCATACTTAAATAAATAATTTTGGGAGAAGGGAAGGGAACTTCATGTA  1400

Qy    889 CTGGAGTATGTCATGGTCATTATTATAATTTAAAAGTTTTAAAAATGAGATTCATTAGCTAAAATGA   948
          || || ||| |||| | || |  ||||| |  |||||||||| | |  ||  |||  | |||| ||
Db   1401 TTTGAATATGTCCTGGTCATTATTAAAAAGTAAAAATATATATAGTTTATTAGGTCTAAATAGA  1460

Qy    949 ATAAAATTACCAGCTAGAACTATTACCGAGAAAATTCTGAGGTGAGGTAAATCAGTAAGGCA  1008
          || ||| |||||| ||||  || |||  || || |||||||   ||||| | |||| ||||
Db   1461 ATAAAACTACCAGCCTAGAACTGTAGAAAACACAT---TGATATGAAGTTTAATGTGTATA---  1514

Qy   1009 GTTGTATTATACCTCGTTAAGCATTTATTTTTCATTAATCATTCATTTATATCATTGTA  1068
          || ||| | |||| | || |  || ||||| | | | | | |||| | |||| ||||
Db   1515 --TGCATTACACTTCCAAAACACATTTTTTTCCAGTTGTACATAATTAAGTTATATCCTTTATA  1572

Qy   1069 ACACTTCTCAGTAATTATTATAAAACATCATTTTAC-TTATGGTAATTTAATAATGTATTTG  1127
          | ||| ||||| |||| || | |||||||||| |   ||| ||| || || ||| || ||
Db   1573 AAACTCCTCAGTAATCATTATAAGCTCTGTAGAATTTTTGGGAAAATTTTATATAGCTTAATGTG  1632

Qy   1128 GTGGTTTCCCACCTGAAAAAGACACAAGCTTAAAAACCTTCTTTGGGAGAAGGGGAACTTGTTA  1187
          || |||| || ||||||||||| | |||  |||| || |||  | |||||  |||  ||| |
Db   1633 GTGGTTTGTTGCCTAGAA-----ACAAACAAAAACTCTTTGATGAAGGAACTCATGTA  1688

Qy   1188 AACCCCACAAAACAAAAGTCTAACTTT---------------   1213
          || || | |||| || |  | |||  ||
Db   1689 AATACCACAAAAACAAAGCCTAACTTTGTTGGGACCAAAAATTGTTTAATAATTATTTTTA  1748

Qy   1214 ------------TTGGACCAAATTTTTATGCCTTGTTGTTTGATGAATTATATTTTTT  1256
                      ||||| ||| || |||| || || |||||| ||  |||||  ||||
Db   1749 TTGATGAATTAAAAGTATATATTTTATGGTACAGAATAATCAGTGTTATATCCTTTATATA  1808

Qy   1257 TAAAATCTTCCTCATTAGCAACCAACTGTGCATTAAAGAGAAGTTTTCAGGGTTATAGACAC  1316
          ||||| ||| || |||||| || |||||| ||||| || |||| | |||||| | ||||
Db   1809 ACATTGCGAGATGGACAAATGGCACAAATTTTATACCTTGGTCGTTGATTTATTTGCA-TTTT  1867

Qy   1317 ATTGAAGAACCAAAATGCCCACGGGGGAGGAGGAGCTGTGGATAATCTTCAAAACTGTCTTT  1376
          || ||| ||| |||| || || ||| || || ||| | ||| |||| ||| || | |||||
Db   1868 AAAAATTTCCTCATTAGCACCACAACTGTGCAGCTGGGGAATCTTTCAGGGGGTATAGGCAC  1927

Qy   1377 AATAAAAGAACACATAGAGCGCCCCAGAAAAAGTAAGTTAAAGACATTTTAAAAAACTTAAGT  1436
          || ||||| |  ||| || | | || || |||||||| || | ||||||  || |||||
Db   1928 ACTGGAGAGTCAAACTGTACGGCCCCAAAAAAAGTGACTGTCTATTAAGTTTCCTT-----  1987

Qy   1437 ATATTTGTCTGACTCCTGCCCTGTTTTTTTTTTTTTTTTTTAGAGAATTGACAGTTTCCTA  1496
          | ||| ||  ||| ||| | | |||||||||||||||| || |||||||| |||| | |
Db   1988 AATAAAAGAACACATGGACGGCCCCAGAAAGGGGGTACTGTGGAAGGGAATAACTTAGTCCTT  2042

Qy   1497 CAATATCT-------CCTCTGTTCTTTTTAACAGAAAAAGGTGTCGCAGGAGATGAGGAG  1550
          || |||||        ||||| | ||||| | || ||||  | | |||||||| ||||||
Db   2043 ATATTTGTCTGGCTGTGCCTATTTCTAT-----GGAATTGACAGTTTCCTG  2088

Qy   1551 TGACAAAGTTCCTAGACTACCTGCAAGTATTTTCTTGGTGTAATTTAATGAACACCGAGTTGGCAC  1610
          || | || || ||||| ||| ||||| ||| ||  |||| | |||| || |  |  ||| || | |
Db   2089 TAATACCTATTGTCATTTTTCTTTTTTCACAGAAAAAGGTGTCGCAGGAGATGAGGAG  2148

Qy   1611 ...
Db   2149 TAAACCAAATTCCTAGACTACCTGCAAGAGTTTCTTTGGTGTAATTAGAACACCGAGTTGGATAA  2208
```

```
Qy    1611 CGGAAAGTTGGAACAAACCGGCTTATTGTAGTGGAAGAGATTTTGGAG 1657
           ||||||||||||| ||||||| || |||||||||| |||||||||||
Db    2209 TAGAAAGTTGGAGACTAAACTGGTTTCGTTGCAGCCAAAGAGTTTGGAG 2255

RESULT 2
AAP20978
ID    AAP20978 standard; DNA; 3241 BP.
XX
AC    AAP20978;
XX
DT    14-MAR-2001 (first entry)
XX
DE    Human low adenosine antisense oligonucleotide related sequence #2545.
XX
KW    Low adenosine antisense oligonucleotide; phosphorothioate; allergy;
KW    human; airway disorder; bronchoconstriction; lung inflammation;
KW    surfactant depletion; respiratory; bronchodilator; antiinflammatory;
KW    immunosuppressive; antiasthmatic; analgesic; hypotensive; cytostatic;
KW    respiratory obstruction; pulmonary obstruction; impeded respiration;
KW    surfactant hypoproduction; pulmonary vasoconstriction; asthma; RDS;
KW    respiratory distress syndrome; pain; cystic fibrosis; allergic rhinitis;
KW    pulmonary hypertension; emphysema; pulmonary transplantation rejection;
KW    chronic obstructive pulmonary disease; pulmonary infection; bronchitis;
KW    cancer; ss.
XX
OS    Homo sapiens.
XX
PN    WO200062736-A2.
XX
PD    26-OCT-2000.
XX
PF    24-MAR-2000; 2000WO-US008020.
XX
PR    06-APR-1999; 99US-0127958P.
XX
PA    (UYEC-) UNIV EAST CAROLINA.
PA    (NYCE/) NYCE J W.
XX
PI    Nyce JW;
XX
DR    WPI; 2000-679539/66.
XX
PT    The present invention describes low adenosine (A) content antisense
PT    oligonucleotides and compositions (I) comprising them. In the antisense
PT    oligonucleotides the A is replaced by a 'Universal' or alternative base.
PT    (I) can have respiratory, bronchodilator, antiinflammatory, analgesic,
PT    immunosuppressive, antiasthmatic, hypotensive and cytostatic activities.
PT    The antisense oligonucleotides and (I) can be used to down-regulate the
PT    expression and or activity of target polypeptides associated with
PT    lung/respiratory disorders and malignancies, such as stimulating and
PT    activating peptide factors and transmitters, transcription factors,
PT    immunoglobulins and antibodies, antibody receptors, cytokines and
PT    chemokines, endogenously produced specific and non-specific enzymes,
PT    binding proteins, adhesion molecules and their receptors, cytokine and
PT    chemokine receptors, adenosine receptors, bradykinin receptors, central
PT    nervous system (CNS) and peripheral nervous and non-nervous system
PT    receptors, CNS and peripheral nervous system peptide
PT    transmitters, defensins, growth factors, vasoactive peptides and
PT    receptors, binding proteins and malignancy associated proteins. The
PT    antisense oligonucleotides may be used in this way to treat disorders
PT    including respiratory obstruction (especially pulmonary obstruction
PT    and/or bronchoconstriction) and/or lung inflammation, allergy(ies) and/or
PT    surfactant hypoproduction which are associated with a disease or
PT    condition selected from pulmonary vasoconstriction, inflammation,
PT    allergies, asthma, impeded respiration, respiratory distress syndrome
```

```
CC    (RDS), pain, cystic fibrosis (CF), allergic rhinitis (AR), pulmonary
CC    hypertension, emphysema, chronic obstructive pulmonary disease (COPD),
CC    pulmonary transplantation rejection, pulmonary infections, bronchitis,
CC    and/or cancer. AAP18434 to AAP21543 represent human polynucleotide
CC    fragments and antisense oligonucleotides used in the exemplification of
CC    the present invention
XX
SQ    Sequence 3241 BP; 1026 A; 546 C; 632 G; 1037 T; 0 U; 0 Other;

Query Match          38.3%;  Score 634.6;  DB 3;  Length 3241;
Best Local Similarity   68.6%;  Pred. No. 1.5e-115;
Matches 1226;  Conservative   0;  Mismatches  374;  Indels 187;  Gaps  18;
```

```
Qy       1 AGGCAAACACTGAACATTCAGGAGCTATGAGAATGGCTTCTACAATTAAAATGAATG 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     526 AGGCAAACACGACAGAAACGTTTCAGAGCCATGAGGCCATTGCTTCTGCGATTTGAGTTTGCTAGCTC 585

Qy      61 TTCGGGGCTGCCTATGTTTCTCGCCTTTGCTGTAGAAAATCCCATGAAATAGGACTGGTGGCAG 120
           ||||  |||||| || ||||  ||||||  ||||| |||||||||||| |||||| |||||
Db     586 TTGGAGCTGCCTACGGTGTATGCCATCCCCACAGAAATCCCACACAGAGTCCAATTGGTGAAAG 645

Qy     121 AGACCCTGACACTGCCTCCCACTCATCATGGAACTTGGCTGGTAGGCGATGGGGGTAATTTTCT 180
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     646 AGACCCTGGCACTGCGTTTCTACTCCATCGAACTCCTGCTGATAGCCAATGAGGTAATTTTCT 705

Qy     181 TTTTGATTCCTACAGTCTTTAAAAATGCATGGGGTGAATTGGTGGGTGGTGGCTAGTT------ 234
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||| 
Db     706 TTATGATTCCTACAGTCTGTAAAAGTGCATAAGTGTAATCATTTGTGATGGTTCCTTTACTAT 765

Qy     235 -TTTAAAGATCCATTATCAATAATGAGACTAATGAGTGTTAATAATATATAATGGGTACC 293
            ||||| ||||||||||||||||||||||||||||||||||||||||||||||||
Db     766 ATATAGAGAATCTGTTATAAAATAATAAGATTCTGAG-CACATTAGTACACATGGGTGATAACT 824

Qy     294 ATGTTACTCAGGAGAATATATATGAAGAGTTATGAAACCTTACAATACACATTAAAAAAATGAATG 353
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     825 ACATCACCAGCAAACATTCTGTTGAAAAAGTTATCAGAAATGCTGGGTGGTCGTAAAAATGATTG 884

Qy     354 TTCGTTCCTTTCCTTTTTCAGAACCTGATGAATTCCTACTCCCTGAAAAAAAAAATGAAGTT 413
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     885 -TATTTCCTTTCCTCTCCAGACTCTGAGGATTCCCTGTTCCCTGTTACATARAAAAGTRAAGTT 943

Qy     414 AAATTATCGATTTGATAAAATAAATGATTACATGAATCAGT------TTCATATTTTAAGCTATAAA 469
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     944 AAAATTATGATTCAGTAAAAATGGGCCATGAATAAGTAAAATTCCCTGTTTTAAGCTGTAAA 1003

Qy     470 GTATCAGTTAAACATTGGGATGATGAGTAAATTTAATTCTACTATTTTATTTTTATTGTGTCGGGGATGT 529
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1004 TCATTAGTTATCATTGGAACTAATTAATTTTCTATATTTTGTTTTCATATGGGTGGCTGT 1063

Qy     530 AAAT-TATGTGCTTATGAATAATTAGGAATGGGTGTTAGGAATGGCTCTACAATTAAGTA 588
           |||| ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1064 GAATGTCTGTACTTACTTTATAAATATGAGGGAATGACTTT------TTATCAGTA 1108

Qy     589 GAATCCATTAAGCAAGTGGATCAGGCGCCCTTTGTTTTGTTGTCTCCAACTCAAAG 648
           |||||||||||| ||||| || ||| ||||||||||||||||||||||||||||
Db    1109 GAATCCTTTAAACAAGTGGATTAGGCCCTCTTGGTGATGGTTGTTAGTT-TGCCTCCCAAAG 1167

Qy     649 AGCCTCCGTGTCCAGGGCATTCTTTCCAAAAGAAATTCCATATATGGGTCAGAGATACTTCCTTAG 708
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1168 AGCATCGTGTCAGGGATTCTTCCAGAAGGATTCCACACTGAGTGAGAGGTGCCTGCTAG 1227

Qy     709 GCTCCAATTCACCTCGTGGTGGCTTCCTCACCTCAACGTTTTTCTGAAAGTACTAGCA 768
           |||||||||||||||||||||||||| ||||||| |||||||||| |||||||||||
Db    1228 TCTCCGGTGCAGTTCTGAC-----TCTTCTCCACTCAAACGGTTGTTCGAAAAGTTTAAGCA 1282

Qy     769 ACTTGGGGTTATATTTTTTGAATATGGTCAGTAGACATGAAATATACAGTGAAGTCCT 828
           ||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1283 ACTTCAGAATTATATTTTTTAGAACCATGAACATTAAAATATATAATAACAAATGCC- 1341

Qy     829 ATATTAATTAAGTCACTTCCACATATTTTAAATGATTTTTAAACTTCTAAATGGTATATACAT 888
           ||| |||||||||||| || ||||||||||||||||| |||||||||||||||||||||||||
Db    1342 -CTATATTTAATATAATTTCTGCATACTTAAATATATATGACTATATGATGTGTGTATGCA 1400
```

```
Qy        889 CTGGAGTATGTCATGGTCATATATTAAAAAATGTTAAAAATGTGATATCATTAGTCTAAAATAGA 948
              ||||||||||||||||||| ||||||||||  |||| ||||||| |||||| ||||||||||||
Db       1401 TTTGAAATATGTCCTGGTCATATTAAAAATGTTAAAAATATAGTTTATTAGTCTAAAATAGA 1460

Qy        949 ATAAAATTACCAGCTAGAACTAGTATACGGAGGAAAATTCTGAGGTGAGGTAAATCAGTAAGGCA 1008
              ||||||||||||||||||||| ||| ||  |||||||||| ||||||||||||||||
Db       1461 ATAAAAACTACCAGCTAGAACTGTAGAAAACACAT--TGATATGAGTTTAAGTGTATAA---- 1514

Qy       1009 GTTGTATTATACCTCGTAAGCATTTATTATTTTCATTTTATATCATTTGTA 1068
              |||||||||| ||||| ||||||||||||||||||||||||||||||||
Db       1515 --TGCATTACACTTCCAAAACATTTTTCCAGTTACATTAATTAAGTTATATCCTTTATA 1572

Qy       1069 ACACTTCTCAGTAATTAATTATATAAAACATCATTTAC-TTATGGTAATTAATTAATAGCTTAGTTAAG 1127
              |||||| ||||||||||||||| ||| ||| |||||| |||||||||||| ||||||
Db       1573 AAACTCCTCAGTAATCATATAAGCTTCATCTACTCTTTGAAAAATTTATCTTAATAATGTG 1632

Qy       1128 GTGGTTTCCCACCTGGAAAAAGACACAAGTAAAAAACCTCTGGGAGAAGGGAACTTTGTGTA 1187
              ||||||       || ||||||||| || ||| ||||    || || || |||||| ||||
Db       1633 GTGGTTTGTTGCCTAGAAA----ACAAACAAAAACTCTTTGGGAGAAGGGAACTCATGTA 1688

Qy       1188 AACCCCACAAAAAACAAAAGTCTAACTTT------------------ 1213
              ||||| || |||||| ||||||||||||
Db       1689 AATACCACAAAAACAAAGCCTAACTTTGTGTGGACCAAAAAATTGTTTTAATAATAATATTTTTAA 1748

Qy       1214 -------------TTGGACCAAATTTTTATGCCTTGTTTTGATGAATTATATTTTT 1256
                           ||||||||||||| |||| |||||||||||| || |||||||
Db       1809 ACATTGCAGAATGGACACAAATGGACCAAAATTTTATACCTTGTCTTGATTATATTGCA-TTTT 1867

Qy       1257 TAAAATCTTCCTCATTTAGTACCAACTGTGTCCATTAAAAGAAGTTTTTCAGGGTATAGACAC 1316
              |||| ||| || ||||||||||||||| || |||| |||||||||||||||||| ||||||||
Db       1868 AAAAATTTTCCTCATTTAGCACCAACTGTGCACTGCAAGAAAATCTTTCAGGGAATAGGCAC 1927

Qy       1317 ATTGAAGAACCAAACTGCCCACGGGGGAGGCTGGGATAAACTAATTATTCCAAAACTTGTCTTT 1376
              ||||||| |||||| |||||||||||||||||||||||  ||||||||||||||||||||||
Db       1928 ACTGGAGGTCAAACTGTGCAAGAGGGGGTACTGTGGAAAGCTATTCAAAAAACTGTCCTT 1987

Qy       1377 AATAAAAGAACACATAGAGCGCCCAAAAAAGTAAGTTAAGACATTTTGGCAAAAACTTAAGT 1436
              ||||||| |||| ||||||  ||||||||||||||||| ||||||||| |||||||||||||
Db       1988 AATAAAAGAAATACATTGACGGGCCAAAAAGTAAGTTACACACATT----CAATGGAAGCT 2042

Qy       1437 ATATTTGTTCTGACTCTGCCTGTTTTTTTTTTTTTTTTTTTTTACAAGAAATTGACAGTTTCCTA 1496
              ||||||| ||||| |||||||||||||||||||||||||||||||||||||||||||||
Db       2043 ATATTTGTTCTGGCTGGCCCTATTTCTAT-----GGAATTGACAGTTTCCTG 2088

Qy       1497 CAATATCT-----CCTCTGTTCTTTTAACGAAAAAGGTTGTCAGGAGGAAAGATGGAGAG 1550
              ||||| ||     |||||||| |||||||||||||||||||||||||||||||||||||
Db       2089 TAATACTTATTGTCATTTTTCTTTTTTTCACAGAAAAAGTGTGGAGAAGAAGAACGGAGAG 2148

Qy       1611 CGGAAAGTTGAGAACAAACACGGGCTTATTGTAGTGGAAGAATTTTGGAG 1657
              ||||||||||||||||||| |||||||| || || |||||||||||||||
Db       2209 TAGAAAGTTGAGACTAAAACTCGTTTGTTGCAGCCAAAAGATTTTGGAG 2255
```

KW antiinflammatory steroid; nasal airway dysfunction;
KW Human; antisense; lung dysfunction; nasal airway dysfunction;
XX ubiquinone;
DE Human nucleic acid sequence.
XX
DT 17-OCT-2003 (first entry)
AC AB296672;
XX
ID AB296672 standard; DNA; 3241 BP.
XX

RESULT 3
AB296672

KW antiasthmatic; hypotensive; immunosuppressive; cytostatic; gene therapy;
KW antisense gene therapy; respiratory; lung; adenosine sensitivity;
KW adenosine receptor; bronchodilation; bronchoconstriction; lung allergy;
KW lung inflammation; respiratory disease; ds.
XX
OS Homo sapiens.
XX
PN WO20028530B-A2.
XX
PD 31-OCT-2002.
XX
PF 23-APR-2002; 2002WO-US013135.
XX
PR 24-APR-2001; 2001US-0286137P.
XX
PA (EPIG-) EPIGENESIS PHARM INC.
XX
PI Nyce JW, Li Y, Sandrasagra A, Katz E, Pabalan J, Aguilar D;
PI Miller S, Tang L, Shahabuddin S;
XX
PT Pharmaceutical composition for treating ailments associated with impaired
PT respiration, has oligo(s) antisense to specific gene(s) or its
PT corresponding RNAs, and glucocorticoid or non-glucocorticoid steroid or
PT ubiquinone.
XX
DR WPI; 2003-229219/22.
XX
PS Disclosure; SEQ ID NO 11914; 872pp; English.
XX
CC The invention relates to a novel pharmaceutical composition, which has a
CC first active agent comprising an oligonucleotide antisense to the
CC initiation codon, coding region, 5' or 3' end genomic flanking regions,
CC 5' and 3' intron-exon junctions, or regions within 2-10 nucleotides of
CC junctions of genes encoding a polypeptide associated with lung and/or
CC nasal airway dysfunction and a second active agent comprising an
CC antiinflammatory steroid and ubiquinone. A composition of the invention
CC has antiinflammatory, antiallergic, antiasthmatic, hypotensive,
CC immunosuppressive, and cytostatic activity. The composition may have a
CC use in antisense gene therapy. The composition is useful for treating or
CC preventing a respiratory, lung or malignant disease or condition, also
CC for enhancing the prophylactic or therapeutic respiratory effect of an
CC antiinflammatory steroid in a subject, for reducing or depleting levels
CC of, or reducing sensitivity to adenosine, reducing levels of adenosine
CC receptor, producing bronchodilation, increasing levels of ubiquinone or
CC lung surfactant in a subject's tissue, or treating bronchoconstriction,
CC lung inflammation, lung allergies, or a respiratory disease or condition.
CC Note: The sequence data for this patent is not represented in the printed
CC specification, but was obtained in electronic format directly from WIPO
CC at ftp.wipo.int/pub/published_pct_sequences
XX
SQ Sequence 3241 BP; 546 A; 632 C; 1037 G; 1037 T; 0 U; 0 Other;

Query Match   38.3%; Score 634.6; DB 10; Length 3241;
Best Local Similarity 68.6%; Pred. No. 1.5e-115;
Matches 1226; Conservative   0; Mismatches 374; Indels 187; Gaps 18;
```

```
Qy          1 AGGCAAACACACTGAACATTTCAGAGCTATGAGAAAATCCATGAATAGACTGGTGGCAG 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        526 AGGCAAACGCAGAACCGTTTCAGAGCCATGAGGATGCTTCTGCATTTCAGTTTGCTAGCTC 585

Qy         61 TTGGGGCTGCCTATGTTCTGCCTTTGCGTTGAGAAAAATCCATGAATAGACTGGTGGCAG 120
              ||| ||||| |||| ||||||||||||||| |||||||||||||| |||||||||||||
Db        586 TTGGAGCTGCCTACGTGTATAGCCCATCCCCACAGAAATTCCACAAGTGCATTGGGTGAAAG 645

Qy        121 AGACCTTGACACTGCCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGGTAATTTCT 180
              |||||||| |||| || ||| ||| ||| |||||| ||||| ||| || |||| |||||||
Db        646 AGAACCTTGGCACTGCTTTCTACTCATCGAACTCGCCAATGAGAGGTAATTTTCT 705

Qy        181 TTTTGAATTCCTTACAGTCTTTAAAAATCGATGGGTAATTGGGTGGTGGGGTGGCTAGTT------ 234
              |||||||| ||||||||||| |||||||||||||||||||||||| |||||||
Db        706 TTATGAATTCCTACAGTCTGTAAAGTGCATAGGTAATCATTTGTGATGGTTCCTTTACTAT 765

Qy        235 -TTTAAAGATCCATTATCAAATAATGAAGTAATGAGTGTTAATAATATAATAATGGGTAACC 293
```

```
Db    766 ATATAGAGATCTGTTATAAATAATAACAGATCTGAG-CACATTAGTACATGGGTGATAACT 824
          |||||  ||||||| ||  ||  ||  ||        |||       ||     ||||
Qy    294 ATGTTACTCAGAAGAGAATTATATTATTAGAACCTTACAACATTAAAAATGAATG      353
Db    825 ACATCACCAGCAAAACATTCTGTTAAAAATAATGAAAATGTATGAAAATGATTG        884
          ||||||| |||| ||||  |  |||||  |||||  ||  | |||||| |||
Qy    354 TTGTTTCCTTTCTTTTTCAGAACCTGATGATTCCTACTCCTGAAAATAAAAAATGTAAGTT 413
Db    885 -TATTTCCTTTCCTCTCCAGAGCTCTGAGGATTCCTGTTCCCTGTACATAAAATGTAAGTT 943
          ||||||||||||||||||||| |||| || |||||||||| |||  |||||||||||||
Qy    414 AAATTATGATTGATAAAAATGATTACATGAATCAGT----TTCATATTTAAGCTATAAA    469
Db    944 AAATTATGATTCAGTAAAATGAATGAATAAGTAAAATTCCTGTTTTAAGCTGTAAA      1003
          |||||||||||  || |||||  || |||  |||||||| |||||||||| |  |
Qy    470 TCATTCAGTTATCATTGGGATGATTTAATTTTATCTATTTTGTTTTTATTGTGTGCGGATGT 529
Db   1004 ATATTTTGTTGGGCTGTGCCTGTTTTTTTTTTTTTTTACAAGAATTGACAGTTTCCTA    1063
          ||||   || |||||  | |||||||||||||||||| ||||||| |||  |||| |
Qy    530 AAAT-TATGTGTTATGAATATTAGGAATGGCTCTACAATATTAAGTA           588
Db   1064 GAAGTGTCTGTACTTATAAAATGAGGAAATGACTTT-               1108
          |||||| | || || ||||||  |||| ||||||||
Qy    589 GAATCCATTAAGCAAGTGGATCAGGCCCTTTTTGATGGTTCAGTTCTCCATCTCAAAG   648
Db   1109 GAATCCTTTAAACAAGTGGGATTAGGCTCTTTGGTCAGTTGTTAGTT-TGCCTCCCAAAG 1167
          |||||| ||||| |||||| |||||| ||||| |||| | | |||| |||||||||||
Qy    649 AGCCTCGTCGGGCATTCACCTCTGTCGTTGGGCTTCCTCACCTCAAAGTAGAGTAGCA 708
Db   1168 AGCATCCGTGTCAGGGATTCTTTCCAGAAGGGATTCCACACTGAGTGAGGGTCCGTGCTAG 1227
          |||  |||| |||| |||| ||||||| ||||| |||  | |||| ||||  |  | |
Qy    709 GCTCCATTCACCTCTGTCGTTGGGCTTCCTCACCTCAAAGTAGAGTAGTTAGCA        768
Db   1228 TCTCCCTGCAGTTCTGAC------TCTTCTCACTCTACCAGGTGTTCTTGTAAGTATTAGCA 1282
          ||||| |||| |||||||      ||||||||||  ||  || |||  |||||| |||||
Qy    769 ACTTGGGGTTATATATTTTTAGAATTATGGTCAGTAGACAGTGAAAAATACAGTGAAGTCCT 828
Db   1283 ACTCAGAATTATATTTTTAGAACCATGATCAGTAGACCATTAAAATATATAACAAATGCC- 1341
          ||||||||||||||||||||  |||| |||||||||| ||| |||||||| |||||||||
Qy    829 ATATTAAATAGTCACTTCCACATATTATTTTAAATGATTTTTAACTCTAAGGAATCATATACAT 888
Db   1342 -CTATATTAATAATTCTGCATACTTAAATAATTATATGACTATATATGTGTTGTGTATGCA 1400
          |||||||||||  | || ||| ||||| |||||||| |||| |||| |||| || ||||
Qy    889 CTGGAGTAGTGTCATGGGTCATATAATAAAATGTTAAAATGTTGATATCATTAGTCATAAGA 948
Db   1401 TTTGAATATGTCCTGGTCATATTAAAAGTAAAAATATATATGTTTTATTAGTCTAAATAGA 1460
          ||||| ||||| |||||||||  || ||||||||||||||| |||||||||||||| ||
Qy    949 ATAAAATTACCAGCTAGAACTATACGAGGAAATTCTGAGGTGAGGTAAATCAGTAAGGCA 1008
Db   1461 ATAAAAACTACCAGCTAGAAACTGAGAAAACACAT--TGATATGAGTTTAAATGTATAA--- 1514
          |||||| |||||||||| |  ||||| |||||||  ||||| ||||||||||| ||||
Qy   1009 GTTGTATTATACCTCCTAAGCAGATTTTATTTTTTTCATTATTATCATTTTATTTGTA   1068
Db   1515 --TGCATTACACTTCCAAAAACATTTTTTCCAGTTACGTTACATAATTAAGCTTATAICCTTTATA 1572
          |||||||| |||| |||||||||||  || ||| || ||  ||| |||| ||||
Qy   1069 ACACTTCTCAGTAATTATATAAAACATCATTTAC-TTATGGTAATAATTAGCTTAGTATAAAG 1127
Db   1573 AAACTCCTCAGTGAATCATATATAAGCTTCATCCTACTTTTTTGAAAATTTTATCTTAATATGTG 1632
          |||||||||||| |||||||||||  |||||| | ||||||| |||||||||||| ||||
Qy   1128 GTGGGTTTCCCACCTGGAAAAGACACAAGTAAAAAACCTCTTGGGAGAAGGGAACTTGTGTA 1187
Db   1633 GTGGGTTTGTTGCCTAGAAA----ACAAACAAAAAACTCTTTGGGAGAAGGGAACTCATGTA 1688
          ||||| || ||||||| ||    ||||| ||||||||| |||||||||||||| || |||
Qy   1188 AACCCCACAAAAACAAAGTCTAACTTT---                        1213
Db   1689 AATACCACAAAAACAAAGCCTACTTTGTTGGACCAAAAATGTTTTAATAATTATTTTTTAA 1748
          ||| |||||||||||  ||||||||
Qy   1214 ------                                                 1213
Db   1749 TTGATGAATTAAAAAGTATATATATTTTATTGTGTACAAATAATGATGTTTTGAATATATTTTT 1808
          |||||||||||
Qy   1214 ------TTGGACCAAATTTTTATGCCTTGTTTTGATGAATATTATATTTT    1256
```

RESULT 4
AAA34858
ID   AAA34858 standard; DNA; 4057 BP.
XX
AC   AAA34858;
XX
DT   28-JUL-2000 (first entry)
XX
DE   Human adenosine receptor related polynucleotide SEQ ID NO:2547.
XX
KW   Human; adenosine receptor; low adenosine antisense oligonucleotide;
KW   phosphorothioate; impaired respiration; inflammation; allergy;
KW   allergic disease; bronchoconstriction; inhibitor; antiinflammatory;
KW   antiallergic; antiasthmatic; cytostatic; analgesic; impaired airway;
KW   lung disease; ischaemic condition; pain; cystic fibrosis; emphysema;
KW   respiratory distress syndrome; pulmonary vasoconstriction; asthma;
KW   pulmonary hypertension; chronic obstructive pulmonary disease; COPD;
KW   cancer; leukaemia; lymphoma; carcinoma; metastasis; ss.
XX
OS   Homo sapiens.
XX
PN   WO200009525-A2.
XX
PD   24-FEB-2000.
XX
PF   03-AUG-1999;   99WO-US017712.
XX
PR   03-AUG-1998;   98US-0095212P.
XX
PA   (UYEC-) UNIV EAST CAROLINA.
XX
PI   Nyce JW;
XX
DR   WPI; 2000-205971/18.
XX
PT   New antisense oligonucleotides useful for treating e.g. pulmonary
PT   vasoconstruction, inflammation, allergies, asthma, hypertension,
PT   bronchitis, emphysema, respiratory distress syndrome, ischemia or
PT   cancers.
XX
PS   Disclosure; Page 717-718; 1343pp; English.
XX

```
Db   1809 ACATTGCAGAATGGACAATGGGACCAAAATTTTTATACCTTGTCTTGATTATTTGCCA-TTTT 1867
          |||||||||||| ||||| || ||||||||| ||||||| | ||| ||| ||||||  ||||
Qy   1257 TAAAATCTTCCTCATTTAGCACCCAACTGTGCATTAAAGAAGTTTTCAGGGGTATAGACAC 1316
Db   1868 AAAAATTTTCCTCATTTAGCACAACTGTGCATTAAAGAAGTTTTCAGGGGAATAGGCAC 1927
          ||||||||||||||||||||| ||||||||||||||||||||||||||||  |||| ||
Qy   1317 ATTGAAGAACCAAAACTCCCACCAGGGAGGAGGCTGGGGATAAACATTATTCCAAAAACTTG 1376
Db   1928 ACTGGAGAGTCAAAACTGTCCAAAGGGGGGTACTGTGGAAAGACTATTCATTAAAAAACTTG 1987
          |||  ||||| ||||||  ||| ||||  ||||| ||||| ||| |||| ||||||||||
Qy   1377 AATAAAAGAAACACATAGAGCGCCCACAAAAAGTAAGTTAAAGACATTTGGCAAAAAACTTAAGT 1436
Db   1988 AATAAAAAAAATACATTGACGGGCCCAAAAAGTAAGTTACACACATT-----CAATGGAAGCT 2042
          |||||||  ||| ||| ||| ||||| ||||||||||||| ||||||     ||||| |||
Qy   1437 ATATTTGTCTGACTCTGCCTGCTGTTTTTTTTTTTTTTTACAAGAATTGACAGTTTCCTA 1496
Db   2043 ATATTTTGTCTGGCTGTGCCTATTTCTAT------GGAATTGACAGTTTCCTG       2088
          |||||| |||| ||| ||||  |||| ||      ||||||||||||||||||
Qy   1497 CAATATCT-------CCTCTGTTCTTTTAACAGAAAAAGGTTGTGCAGGAGAGAAGATGGAGAG 1550
Db   2089 TAATACCTTATTGTCATTTTCTTTTTCACAGAAAAAGTGTGGAGGAGAAAGACGGAGAG 2148
          ||| ||| | | | ||| ||||||  |||||||||  ||| |||||| ||| |||||||
Qy   1551 TCACAAAGTTCCTTAGACTACCTTGCAAGTATTTTCTTTGGTTTAATTAAAACACCGAGTCTGGGACAC 1610
Db   2149 TAAACCAATTCCTAGACTACCTCGCAAGAGTTTCTTCGGTGTAATGAACACCGAGTGGGATAA 2208
          ||| |||||||||||||||||| |||| ||||||| |||||||| |||||||| ||||  ||
Qy   1611 CGGAAAGTTGAGAACAAAACCGGCTTATTGTAGTGGTGAAGAGTTTGGAG  1657
Db   2209 TAGAAAGTTGAGACTAAACTGGTTTTGTTGCAGCCAAAGAGATTTTGGGAG 2255
```

CC The present invention describes a new composition comprising an antisense
CC oligonucleotide (ON) with low adenosine (up to 15%), which targets
CC nucleic acids involved in bronchoconstriction, allergies, and/or
CC inflammation. The ON can have antiinflammatory, antiallergic,
CC antiasthmatic, cytostatic and analgesic activities. The compositions are
CC useful for treatment of diseases associated with inflammation,
CC impaired airways, including lung disease and diseases whose secondary
CC effects afflict the lungs of a subject. They can be used for treating
CC e.g. ischaemic conditions, pulmonary vasoconstriction, allergies, asthma,
CC impeded respiration, respiratory distress syndrome, pain, cystic
CC fibrosis, pulmonary hypertension, emphysema, chronic obstructive
CC pulmonary disease (COPD), and cancers such as leukaemias, lymphomas,
CC carcinomas, and cancers which may metastasise to the lungs, including
CC breast and prostate cancer. The reduction of the adenosine content of the
CC ONs reduces side effects. The A-containing ONs break down with the
CC release of deoxyadenosine which activates adenosine receptors causing
CC bronchoconstriction and inflammation. AAA22313 to AAA35312 represent the
CC nucleotide sequences given in the sequence listing from the present
CC invention, which correspond to SEQ ID NO:1 to 2815, and then the last 185
CC sequences are also called SEQ ID NO:1 to 185, but the sequences differ
CC from the previously named sequences. SEQ ID NO:11 to 1680 (AAA22323 to
CC AAA33992) are specifically claimed ONs from the present invention. N.B.
CC Sequences given in the disclosure of the present invention do not match
CC up with their corresponding SEQ ID NO: sequences given in the sequence
CC listing
XX
SQ Sequence 4057 BP; 1303 A; 683 C; 796 G; 1275 T; 0 U; 0 Other;

Query Match   38.3%; Score 634.6; DB 3; Length 4057;
Best Local Similarity   68.6%; Pred. No. 1.5e-115;
Matches 1226; Conservative   0; Mismatches 374; Indels 187; Gaps 18;

```
Qy       1 AGGCAAAACACTGAACATTTCAGAGAGCTATGAGAATCCTTCTGAATTTGAGTTTTGCTAGCTC 60
           ||||||||||||||||||||||||||| |||||||||||||||||||||||||||||||||||
Db     526 AGGCAAAACGAGAACCGTTTCAGAGGATGCTTCTCGACATTTGCCATTGTCCATTTGCTAGCTC 585

Qy      61 TTTGGGGGCTGCCTATGTGTTTCTGCCTTTGCTCGTTAGAGAAAATCCCATGAATAGACTGGTGGGCAG 120
           |||||| ||||| ||||||||| |||||||| ||||||||||||||||||||||||| ||||||||
Db     586 TTGGAGCTGCCTACGTGTATGCCATCCCCACAGAAAAATTCCCACAAAGTGCATTGGTGTGAAAG 645

Qy     121 AGACCTTGACACTGCTCTCCACTCACTCGGCTGCTGATAGGCGATGGGGGTAATTTCT 180
           |||||||||||| ||||||||||||||||||||||||||||||||||||||||||||
Db     646 AGACCTTGGGCACTGCTTTCTCACTCATCGAACTCCAATGAGGTAATTTTCT 705

Qy     181 TTTTGATTTCCTACACGTCTTTTAAAAATGCATGGGGTAATTGGGTGGGCTAGTT------ 234
           |||| |||||||||| |||||||||||||||||||||||||||||||||| |||
Db     706 TTATGATTCCTACAGTCTGTAAAGTGCATTAGGGTAATCATTTGATGGTTCCTTTACTAT 765

Qy     235 -TTTAAAGATCCATTATATCAATAATGAGAGTGTTAATAATATAATGAATGGGTAACC 293
           |||||||||||||||||||| ||||||||||||||||||||||| ||||||||||||
Db     766 ATATAGAGAGCTGTTATAATAATAATAAGATCTGAG-CACATTGATACTGGGTGATAAACT 824

Qy     294 ATGTTACTCAGAAGAATTATATATAAAGGTTATGAACCTTACACAATACCATTAAAAAATGAAATG 353
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     825 ACATCACCAGCAAAACATTCTGTTAAAAAGTTATTGAATGCTCGGTGTGCTGTAAAAAATGATTG 884

Qy     354 TTGTTTCCTTTTCTTTTTCAGAAACCGATGATTCCTCACTCCTGAAAAATAAAAAATGTAAGTT 413
           ||||| | |||||||||||||||| |||||||||||||||||||||||||||||||||||||
Db     885 -TATTTCCTTTCCTCTCCTCAGACTCCTGACTTCCTGTACATTAAAATGTAAGTT 943

Qy     414 AAAATTATATGATTTGATTAAAAATGAATTACATGAATCAGT-----TTCATATTTTTAAGCTTATAAA 469
           |||||||||||||||||||||| |||||||||||||||||||||||||||||||||||
Db     944 AAATTAATGATTCAGTAAAAAAATGATGGCCATGAATAAGTAAAAAAATCAGT-----CAATGGGAAGCT 1003

Qy     470 GTATCAGTTAACATTGGGGATGAATTTAATTTTATCTATTTTTGTTTTTTATGTGTGCGATAGT 529
           ||||||||||||||||| |||||||||||||||||||||||||||||||||||||||||
Db    1004 TCATTAGTTTAATCATTGGGAACTATTTAGTTTTTGTTTTTCATATGGGTGGCTGT 1063

Qy     530 AAAT-TATGTGCTGTACTTATAAAATATTAGGGAATTAGCATTTTAGCA 588
           ||| ||||||||||| |||||||||||||||||||||||||
Db    1064 GAATGTTCTGTACTTATAAAATGAGGAATGACTTT-------- 1108

Qy     589 GAATCCAATTAAGCAAGTGGATCAGGCCCTTTTTGATGTTGTCAGTTCTCCATCTCAAAG 648
           |||| || |||||||||| ||||||| |||||||||||||||||||||||||||||||||
Db    1109 GAATCCTTTAAACAAGTGGATTAGGCTTCTTTGGTGATGGTTGTTAGTT-TGCCTCCAAAG 1167

Qy     649 AGCCTGCGTGTCAGGCATTCTTGCTCCAATTCCATATTGGGGTCAGAAGATACTTCCTAG 708
           |||||||||||||||||||||||| ||||||| |||||||||||||||| ||||||||
Db    1168 AGCATGCGTGTCAGGGAATTCTTTCCCAGGAATTCCACACTGCAGTGAGGGGAGGGTGCGTCGTAG 1227

Qy     709 GCTCCAATTCACCTCTGTCGTTCCTGGCTTTCCTCCACTTCAACGTTTTTCTGAAGTACTGA 768
           |||||||||| |||||||||||||||||||||| ||||||||||||||||||||||||
Db    1228 TCTCCCGTGCAGTTCCGAC--------TCTTTCTCACTCTTAACGTCGTGTTTCTGAAAGTTATTAGCA 1282

Qy     769 ACTTGGGGTTTATATTTTTAGTAATTATGGTCAGTAGCAGCATTGAAAAATATACAGTGAGTCCT 828
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1283 ACTCAGAATTATATTTTTTAGAACCATGATCAGTAGACATTAAAATATATAACAAAATGCC- 1341

Qy     829 ATATTAATAGTCACTTCCACATATTTAAATGAATTTTTAACTCTAATGGAATCATATACAT 888
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1342 -CTAATAATAATTTCTGCATACTTAAATATTTAAATAATTATGATACTATTATATGAGGACAT 1400

Qy     889 CTGGAGTATGTCATGGTCATTATTTAAAAAATGTTAAAAAATGTGATGATATCATTAGTCTAAATGA 948
           ||||||||||||| |||||||||||||||||||||||||||||||||||| |||||||||
Db    1401 TTTGAATATGTCCCTGGTTCATTATTAAAAAATGTAAAAAATATAGTTTTTTATTAGTTCTAAAATAGA 1460

Qy     949 ATAAAAATTACCAGCCTAGAACTATACGAGGAAAATTCTGAGGTGAGGGTAAATCAGTAAGGCA 1008
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1461 ATAAAAACTACCAGAACTGTAGAAACACAT--TGATATGAGTTTATTGTTATAA---- 1514

Qy    1009 GTTGTATTATACCCTCGTTAAGGCATTTATTTTCATTAATCATTTCATTTATATCATTCATTTGTA 1068
           ||||||||||||||| ||||||||||||||||| |||||| ||||||||||||||||||
Db    1515 --TGCATTACACTTCCAAAACATTTTTTCCAGTTACATAATTAATAAGTTATATCCTTTATA 1572

Qy    1069 ACACTTCTTCAGTAATTATATTAAAACATCATTTAC-TTATGGTAATTATAGCTTAATATGTG 1127
           |||||||||||||||||||||||||||||||| |||||||||||||||||||||||||
Db    1573 AAACTCCTTCAGTAGTCATATAGCTTCATCTACTTTTGAAAATTTATCTTAATATATATG 1632

Qy    1128 GTGGTTTCCCACCTGGAAAAGACACAAAAGTAAAAACCTCTTGGGAGAGGAGGGAACTCTGTGTA 1187
           ||||||| |||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db    1633 GTGGTTTTGTTGCCTAGAAA------ACAAACAAAAAACCTTTGGAGAAGAAGGGAACTCATGTA 1688

Qy    1188 AACCCCACAAAAAACAAAAGTCTAACTTT-------- 1213
           ||| ||||||||||||||||||||||||
Db    1689 AATACCACAAAACAAAGCCTAACTTTGTGGACATAGTCTTTTAATAATTATTTTTTAA 1748

Qy    1214 -------------- 1213
Db    1749 TTGATGAATTAAAAAGTATATATAATTAATGAGTTGTACAAATATGGAGTGATTTTGAAGGTAGTATGTAT 1808

Qy    1214 -------------- 1213
           ||||||||||||||||||||||||| |||||||||||||||||| |||||
Db    1809 ACAATTGCGAGAATGGACAATGGACACCAAAATTTATACCTTGTCTGATTATTTGCA-TTTT 1867

Qy    1257 TAAAATCTTCCTCATTTAGCACCAACTGTGGCATTAAAGAGAGGAGTTTTTCAGGGTATAGCAC 1316
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1868 AAAAAATTTCCTCATTTAGCAACAACTGTGCTGAAAAAATCTTCAGGGAAATAGGCAC 1927

Qy    1317 ATTGAGAAACCAAACTCCCCACGGGGAGGCGTGGGATAAACTTATTCCAAAAACTTGTCTTT 1376
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1928 ACTGGGAGGAGTCAAAACGTGTGCAAGGGGTACTGTGATGAAAGCTATTCAAAACTTGTCCTT 1987

Qy    1377 AATAAAAAGAACACATAGAGCGCCCAAAAAGTAAGTAAAGCAATTGGCAAAAAACTTAAGT 1436
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1988 AATAAAGAAAATAACATTGACGGCCCAAAAAGTAAGTTTACAGACATT-----CAATGGGAAGCT 2042

Qy    1437 ATATTTGTTCTGACTCTGCCCTGTTTTTTTTTTTTTTACAGAGAATTGACAGTTTCCTA 1496
           ||||||| ||||||||||||||||||||||||||||||||||| ||||||||||
Db    2043 ATATTTGTCTGGCGTGCCATTCTAT----------GGAATTGACAGTTTCCTG 2088

Qy    1497 CAATATCT--------CCTCTGTTCTTTTTAACAGAAAAAGTGTCAGAGAGGAGAAAGTGGGAGAG 1550
           ||||||| ||||||||||||||| |||||||| |||||||||||||||||||
Db    2089 TAATACCTTATTGTCATTTTCTTTTTCACAGAAAAAAGTGTGGAGAAAAGAAGAGAGAGAG 2148

Qy    1551 TGACAAAGTTCCTAGACTACCTGCAAGTATTCTTGGTGTAATAAACACCCAGTGGACAC 1610
           |||||||||||||||||||||||||||||||||||||||||||||||
Db    2089 TAATACCTTATTGTCATTTTCTTTTTCACAGAAAAAAGTGTGGAGAAAAGAAGAGAGAGAG 2148
```

```
Db    2149 TAAACCAAATTCCTAGACTACCTGCAAGAGAGTTTCTTCGGTGATGTAATGAACACCGAGTGCGATAA 2208
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Qy    1611 CGGAAAGTTGAGAACAAACCGCCTTATTGTAGTAGGAGATTTTGGAG 1657
             |||||||||||||||||||||||||||||||||||||||||||||||
Db    2209 TAGAAAGTTGAGACTAAACTGGTTTGTTGCAGCCAAAGATTTTGGAG 2255
```

RESULT 5

AAF20980

ID   AAF20980 standard; DNA; 4057 BP.
XX
AC   AAF20980;
XX
DT   14-MAR-2001 (first entry)
XX
DE   Human low adenosine antisense oligonucleotide related sequence #2547.
XX
KW   Low adenosine antisense oligonucleotide; phosphorothioate; allergy;
KW   human; airway disorder; bronchoconstriction; lung inflammation;
KW   surfactant depletion; respiratory; bronchodilator; antiinflammatory;
KW   immunosuppressive; antiasthmatic; analgesic; hypotensive; cytostatic;
KW   respiratory obstruction; pulmonary obstruction; impeded respiration;
KW   surfactant hypoproduction; pulmonary vasoconstriction; asthma; RDS;
KW   respiratory distress syndrome; pain; cystic fibrosis; allergic rhinitis;
KW   pulmonary hypertension; emphysema; pulmonary transplantation rejection;
KW   chronic obstructive pulmonary disease; pulmonary infection; bronchitis;
KW   cancer; SB.
XX
OS   Homo sapiens.
XX
PN   WO200062736-A2.
XX
PD   26-OCT-2000.
XX
PF   24-MAR-2000; 2000WO-US008020.
XX
PR   06-APR-1999;   99US-0127958P.
XX
PA   (UYEC-) UNIV EAST CAROLINA.
PA   (NYCE/) NYCE J W.
XX
PI   Nyce JW;
XX
DR   WPI; 2000-679539/66.
XX
PT   Low adenosine (A) content antisense oligonucleotides which do not trigger
PT   adenosine receptors during metabolism, useful e.g. for treating cancers
PT   and respiratory obstructions.
XX
PS   Disclosure; Page 788-789; 1592pp; English.
XX
CC   The present invention describes low adenosine (A) content antisense
CC   oligonucleotides and compositions (I) comprising them. In the antisense
CC   oligonucleotide the A is replaced by a 'Universal' or alternative base.
CC   (I) can have respiratory, bronchodilator, antiinflammatory, analgesic,
CC   immunosuppressive, antiasthmatic, hypotensive and cytostatic activities.
CC   The antisense oligonucleotides and (II) can be used to down-regulate the
CC   expression and or activity of target polypeptides associated with
CC   lung/respiratory disorders and malignancies, such as stimulating and
CC   activating peptide factors and transmitters, transcription factors,
CC   immunoglobulins and antibodies, antibody receptors, cytokines and
CC   chemokines, endogenously produced specific and non-specific enzymes,
CC   binding proteins, adhesion molecules and their receptors, cytokine and
CC   chemokine receptors, adenosine receptors, bradykinin receptors, central
CC   nervous system (CNS) and peripheral nervous and non-nervous system
CC   receptors, CNS and peripheral nervous and non-nervous system peptide
CC   transmitters, defensins, growth factors, vasoactive peptides and
CC   receptors, binding proteins and malignancy associated proteins. The
CC   antisense oligonucleotides may be used in this way to treat disorders
CC   including respiratory obstruction (especially pulmonary obstruction
CC   and/or bronchoconstriction) and/or lung inflammation, allergy(ies) and/or
CC   surfactant hypoproduction which are associated with a disease or
CC   condition selected from pulmonary vasoconstriction, inflammation,
CC   allergies, asthma, impeded respiration, respiratory distress syndrome
CC   (RDS), pain, cystic fibrosis (CF), allergic rhinitis (AR), pulmonary
CC   hypertension, emphysema, chronic obstructive pulmonary disease (COPD),
CC   pulmonary transplantation rejection, pulmonary infection, bronchitis,
CC   and/or cancer. AAF18434 to AAF21543 represent human polynucleotide
CC   fragments and antisense oligonucleotides used in the exemplification of
CC   the present invention
XX
SQ   Sequence 4057 BP; 1303 A; 683 C; 796 G; 1275 T; 0 U; 0 Other;

Query Match   38.3%;   Score 634.6; DB 3;   Length 4057;
Best Local Similarity 68.6%;   Pred. No. 1.5e-115;
Matches 1226; Conservative   0; Mismatches 374; Indels 187; Gaps 18;
```

```
Qy       1 AGGCAAACACTGAACACATTTCAGGACTATGAGAATGCTTCGAATTTGAGTTTGCTAGCTC  60
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     526 AGGCAAACCGACAGAACGTTTCAGGAGCCATGAGGAATGCATTTGCATTTGAGTTTCCTAGCTC 585

Qy      61 TTGGGGCTGCCATATGTTTTCTGCCTTTCGTGTAGAAAAATCCCATGAAATAGACTGGTGGCAG 120
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     586 TTGGAGCTGCCTACGTGTATGCCATCCCCACAGAAAATTCCCACAGAAGTGCCATTGGTGAAAG 645

Qy     121 AGAACCTTGACACTGCCTCCCACTCATCGGACTTGGCTGATAGGCGATGGGGGTAATTTTCT 180
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     646 AGACCTTGGCACTGCGTTTCTACTCATCGAACTCTGCGTGGATAGCCAATGAGAGGTAATTTTCT 705

Qy     181 TTTTGATTCCTACAGTCTTTAAAATGCATGGGGTAATTTCATCATGGGTGTGGGTGGCTAGTT- 234
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     706 TTATGATTCCTACAGTCTGTAAAAGTGCATAGGTAATCATTTGGTGTGGGTTCCTTTACTAT 765

Qy     235 -TTTAAAGATCCATTATCAATAATGAAGTAAGTGATGAGTGTTAATAATATATATGGGTAACC 293
              ||||||||||||||||||||||||||||||||||||||||||||| |||||||||||||||||
Db     766 ATATAGAGATCTGTTATTATAAATAATATAGATTCTGAG-CACATTAGTACATGGGTGATAACT 824

Qy     294 ATGTTACTTCAGGAAGAATTATATTAAAAGTTATGAAACCTTACAATACATTAAAAATGAATG 353
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     825 ACATCACCAGCAAACATTCTGTTATGAAAGTTAATGATGGCTTGGGTGTCGTGTAAAAATGATTG 884

Qy     354 TTGTTTCCTTTCTTTTTTCAGAACCTGATGATTCCTACTCCTGAAAATAAAAATGTAAGTT 413
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     885 -TATTTCCTTTCCTCTCCAGACTCTGAGGAATTCCCGTTCCCTGTACATAAAAATGTAAGTT 943

Qy     414 AAAATTATGATTTGATATAAAATGATTACATGAATCAGT----TTCATATTTTAAGCTATAAA 469
             |||||||||||||||||||||||||||||||||||||||    ||||||||||||||||||
Db     944 AAATTATGATTCAGTAAAATGATGGCATGAATAAGGTAAAAATTCCTGTTTTTAACCTGTAAA 1003

Qy     470 GTATCAGTTAACATTGGGATGATTAAAATTTATCTATTTTGTTTTTATGTGTCGGGATGT 529
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1004 TCATTAGTTATTCATTGGAACTATTTAAATTTCTATATATTTTGTTTTCATATGGGTGGCTGT 1063

Qy     530 AAAT-TATGTGCTTATGAATATTAGGAAATGGTTGTTAGGAAATGGCTCTACAATATTAAGTA 588
             |||| ||||||||||||||||||||||||||||||||||||||       ||  |||||
Db    1064 GAATGTCTGTACTTATAAAATATGAGGAAATGACTTT----------TTATCAAGTA 1108

Qy     589 GAATCCATTAAGCAAGTGGGATCAGGCGCCCCTTTTTTGATGTGTGCAAAATCTCCATCTCAAAG 648
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1109 GAATCCTTTAAACAAGTGGGATTAGGCTCTTTTGGTGAGTGGTTGTTAGTT-TGCCTCCCAAAG 1167

Qy     649 AGCCTCGTGTCAGGCAATTCTTTCCAAAAGAAATTCCATATATGGGTCAGAAGATACTTCCTAG 708
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1168 AGCATCGTGTGTCAGGGGATTCTTTCCCAGAAGGAATTCCCACACTGAGTGAGAGGTGCGTGCTAG 1227

Qy     709 GCTCCCATTCACCTCTGTCGTTGGCTTTCCTCACCTCAACGTTTTTCTGAAAAGTACTACCA 768
             ||| |||||||||||||||||||||||||||||||||||||||||     ||||||||||||
Db    1228 TCTCCCGTGCAGTTGTCTGAC-----TCTTTCTCACTCTACAGTGTTTTCGAAAGTATTAGCA 1282

Qy     769 ACTTGGGGTATAGTTTATTTTTAGAATTATGTGTCAGTGAGACATGAAAATATACACAGTGGAAGTCCT 828
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1283 ACTCAGAATTATATTTTTTTAGAACCATGATCAGTAGACATTAAAAATATATATAACAAAATCGC- 1341

Qy     829 ATATTAATAGTCACTTCCACATATTTAAATGATTTTTAACTCTAAATGGAAATATACAT 888
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1342 -CTATATTAATAAATTTCTGCATACTTAAATATATTATGACTATAATGATGGGTGTTGTATGCA 1400
```

```
Qy    889  CTGGAGTATGTCATGGTCATGTGATTATTAAAAATGTTAAAAATGTGATATCATTAGTCTAAATAGA  948
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1401  TTTGAATATGTCCTGGTCATATTAAAAATGTTAAAAATATATAGTTTTATTAGTCTAAATAGA  1460

Qy    949  ATAAAAATTACCAGCTATACGAGACTATACGAGAGAAATCTGAGGTGAGGTAAAATCAGTAAGGCA  1008
           ||||||||||||||||||||||||||||||||||||||||||||||
Db   1461  ATAAAAACTACCAGCTAGAACTGTAGAAACACAT---TGATATGAGTTTAATTGTATAA----  1514

Qy   1009  GTTGTTAATACTTCGTAAGCCATTATCATTTCATTTCATTTCATTTCATTTAGTGTA  1068
           ||||||||||||||||||||||||
Db   1515  --TGCATTACACTTCCAAAACATTTTTTCCAGTTACATAATAGTTATATCCTTTATA  1572

Qy   1069  ACACTTCTCAGTAATTATATATAAACATCATTTAC-TTATGGTAATTATAGCTTAGTATTAAG  1127
           |||||||||||||||||||
Db   1573  AAACTCCTCAGTAATCATATAAGCTTCATCTACTTTTTGAAAAATTTAATTATATGTG  1632

Qy   1128  GTGGTTTCCCACCTGGGAAAAGACACAAGTAAAAACCTCTTGGGGAAGGGAACTTGTGTA  1187
           |||||||||||||||||||||
Db   1633  GTGGTTTGTTGCCTAGAAA----ACAAACAAAAAACTCTTGGACGAAGGGAACTCATGTA  1688

Qy   1188  AACCCCACAAAAACAAAAGTCTAACTTT-------------  1213
           ||||||||||||||
Db   1689  AATACCACAAAAACAAAAGGCTAACTTGTGTGGACCAAAAATGTTTAATAATATTAATTATTTTTAA  1748

Qy   1214  ----------------TTGGACAAAATTTTTATGCCTTGTTTTGATGAATTATATATTTTT  1256
           |||||||||||||||
Db   1809  ACATTGCAGAATGGACAAATGGACCAAATTTTTATACCTTGTCTTCTTTGATTATTTGCA-TTTT  1867

Qy   1257  TAAAATCTTCCTCAGTTAGGCACCAAACTGTGCCATTAAAGAAGTTTTTCAGGGTATAGACAC  1316
           |||||||||||||||||||||
Db   1868  AAAAAATTTTCCTCATTAGCACCAACTGTCCACTGAAGAAATCTTCAGGGAAATAGGCAC  1927

Qy   1317  ATTGAAGAACCAAAACTGCCCACAGCGGAGGCGTGTGGATAAACTATTCCAAAACTTGTCTTT  1376
           ||||||||
Db   1928  ACTGGAGAGTCAAACTGTGCAAGGGGGTACTGTGGAAAAGACTAATCAAAAAACTTGTCTT  1987

Qy   1377  AATAAAAAGAACACATAGACGGCGCCAAAAATGTAAGTTAAAGACATTTGGCAAAAACTTAAGT  1436
           ||||||||||||||
Db   1988  AATAAAGAAATACATTGACGGCCAAAAAGTAAGTTACACACATT----CAATGAAGCT  2042

Qy   1437  ATATTTGTTCTGACTCTGCCTGTTTTTTTTTTTTTTTACAAGAATTGACAGTTTCCTA  1496
           ||||||||||||||||
Db   2043  ATATTTGTCTGGCGTGTGCCTATTTCTAT------GGAATTGACAGTTTCCTG  2088

Qy   1497  CAATATCT--------CCTCTGTCTTTTTTCTTTTTTCTTCACAGAAAAAGGGTCTGCAGGAAAGATCGAGAG  1550
           |||||||
Db   2089  TAATACCTTATTGTCATTTTTCTTTTTCACAGAAAAAAGTGTGAGGAGAAAGACGGAGAG  2148

Qy   1611  CGGAAAGTTGAGAACAAAACCGGCTTATTGTAGTGGAAGAGATTTTGGAG  1657
           |||||||||||
Db   2209  TAGAAAGTTGAGACTAAACTGGTTGTTGTTGCAGCCAAAGATTTGGAG  2255
```

XX
KW antiinflammatory steroid; ubiquinone; antiinflammatory; antiallergic;
KW antiasthmatic; hypotensive; immunosuppressive; cytostatic; gene therapy;
KW antisense gene therapy; respiratory; lung; adenosine sensitivity;
KW adenosine receptor; bronchodilation; bronchoconstriction; lung allergy;
KW lung inflammation; respiratory disease; ds.
XX
OS Homo sapiens.
XX
PN WO20028530B-A2.
XX
PD 31-OCT-2002.
XX
PF 23-APR-2002; 2002WO-US013135.
XX
PR 24-APR-2001; 2001US-0286137P.
XX
PA (EPIG-) EPIGENSIS PHARM INC.
XX
PI Nyce JW, Li Y, Sandraagra A, Katz E, Pabalan J, Aguilar D;
PI Miller S, Tang L, Shahabuddin S;
XX
DR WPI; 2003-229219/22.
XX
PT Pharmaceutical composition for treating ailments associated with impaired
PT respiration, has oligo(s) antisense to specific gene(s) or its
PT corresponding RNAs, and glucocorticoid or non-glucocorticoid steroid or
PT ubiquinone.
XX
PS Disclosure; SEQ ID NO 11916; 872pp; English.
XX
CC The invention relates to a novel pharmaceutical composition, which has a
CC first active agent comprising an oligonucleotide antisense to the
...

SQ Sequence 4057 BP; 1303 A; 683 C; 796 G; 1275 T; 0 U; 0 Other;

Query Match 38.3%; Score 634.6; DB 10; Length 4057;
Best Local Similarity 68.6%; Pred. No. 1.5e-115;
Matches 1226; Conservative 0; Mismatches 374; Indels 187; Gaps 18;

```
Qy     1  AGGCAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTC  60
Db   526  AGGCAAACGAGAAACGTTTCAGAGCCATGAGGAATGCTTCTCGCATTTGAGTTTTGCTAGCTC  585

Qy    61  TTGGGGGCTGCCTATGTTTCTCGCCTTTGCTGTAGAAAATCCCATAGAATAGACTGGTGGCAG  120
Db   586  TTGGAGCTGCCTACGTGTATGCCATGCCATCCCACAGAAATTCCCACAGAAGTGCATTGGTGAAAG  645

Qy   121  AGACCTTGACACTGCTCTCCCACTCATCGACTTGATGAGAGCCGATAGGCCGAGTGGATC  180
Db   646  AGACCTTGGCACTGCTTCTACTCATCCATCGGTAATCTGCTGATAGGCCAATGAGGTAATTTCT  705

Qy   181  TTTTGATTCCTACAGTCTTTAAAATGCATGGGTAATTGGGTGGTGGTGGCTAGTT-----  234
Db   706  TTATGAATTCCTACAGTCTGTAAAGTGCATAGGTAATCATTTGTTGTGATGGTTCCTTTACTAT  765
```

```
Qy    235 -TTTAAAGATCCATTATCAATAATAATGAAAGTAAGTAATGAAGTGTTTAATAATATAATAATGGGTAACC 293
           |||||  |||| |||||||  ||||||||||| ||||||| | ||||||
Db    766 ATATAGAGATCTGTTATAAAATAATAATAAGATTCTGAG-CACATTAGTACATGGGTGATAACT 824

Qy    294 ATGTTACTTCAGGAGAATTATATTAAAAAGTTATGAAGTTCAAATACCATTAAAAAATGAAATG 353
           | |||| |||||||||||||||| | |||||  |||||||  ||||||| |||||||||
Db    825 ACATCACCAGCAAAACATTCTGTTAAAAAGTGTCTGGTGTGCTGTAAAAATGATTG 884

Qy    354 TTGTTTCCTTTTCTTTTTTCAGAACCTGATGAGTTCCTACTCCTGAAAAATAAAAAGTAAGT 413
           ||||||||||  |||||||||||||||||||||||||||||||||||||||
Db    885 -TATTTCCTTTCCTCTCAGAGGATTCCTGTTACTTACATAAAAATGTAAGTT 943

Qy    414 AAAATTATGATTGATAAAAAATGATTACATGAATCAGT-----TTCATATTTTAAGCTATAA 469
           ||||||| ||||| ||||||||| |||||||||||||     ||||||||||||||
Db    944 AAAATTATGATTCAGTAAAAATGGCATGAATAAGTAAAATTTCCTCGTTTTTAAGCTGTAAA 1003

Qy    470 GTATCAGTTAACATTGGGATGACATTTAATTTTAATTTTTTGTTTTTTATGTGTGCGGAATGT 529
           |||||||||  |||||||||| || ||| ||||||||||||||||||||||||||
Db   1004 TCATTAGTTATCATTGGGAACTATTTTAATTTTTTCTATTTTTTTCATTATGGGTGGCTTGT 1063

Qy    530 AAAT-TATGTCCTTATGAATTAGGAATGGCTGTGTTAGGAATGGCTTACACATATTAAGTA 588
           ||||  ||| ||||||| |||||||| |||||| ||||||| | |||||||||||||
Db   1064 GAAATGTCTGTACTTATATAAAATGAGGAAATGACTTT-------TTATCAAGTTA 1108

Qy    589 GAATCCATTAAGCAAGTGGGATCAGGCGCCTTTTTTTGAGTTGTCAGTTCTCCATCTCAAAG 648
           |||| |||||||||||||| || ||||||||||||||||||||||||||||||||||
Db   1109 GAATCCTTTAAACAAGTGGATTAGGCTCTTGGTGATGTGTTAGTT-TGCCTCCCAAAG 1167

Qy    649 AGCCTCGTGTCAGGCCATTCTTTTCCAAAAGAATTCCATATGGGTCAGAGATACTTCCTAG 708
           ||||||||||||||||| |||||||||||||||||||||||||||||||||| |||||
Db   1168 AGCATCGTGTCAGGGGAATCTTTCCAGAAGGAATTCCACACTGAGTGAGAGGTGCGCGTCTAG 1227

Qy    709 GCTCCATTCACCTCTCTCGTTGGCTTTCCTCACCTCAAGCTGTTTTCTCTGAAAGTACTAGCA 768
           |||||||||||||||||||||  |||||||||||||||||||||||||
Db   1228 TCTCCCGTGCCAGTTCTGAC-----TCTTTCTCACTCTAAACGTGTTTCTGAAAGTATTAGCA 1282

Qy    769 ACTTGGGGGTTGTATATTTTTTAGAATTATGGGTCAGTAGACATACAAAAATATACAGTGAGTCT 828
           |||||||  ||||||||||||||| ||| |||||||||||||||||||||
Db   1283 ACTCAGAATTTATATTTTTAGACCATCAGTAGACATTAAAATATACAACAAATGCC- 1341

Qy    829 ATATTAATAGTCACTTCCACATATTTAAATGATTTTTAACTTCTAATGGAATCATATACAT 888
           ||||||||||||||||||||||||||  |||||||||||||||||||||||||
Db   1342 -CTATATTAATAAATTCTGCATACTTAAATAATTATGAGATGGTTGTGTATGCA 1400

Qy    889 CTGGAGTATGTGTCATGGTCATATTAATTATAAACATCATTTAC--TATGGTAATTAGCTTAGTGTATAAG 948
           |||||||| |||||| ||  |||||||||||||||||||||| |||| |||||||
Db   1401 TTTGAATATGTCCTGGTCATATTAAAAAGTGTAAAATATATAGTTATTTATTAGTGTCTAAATAGA 1460

Qy    949 ATAAAAATTACCAAGCTAGAGACTATACGGAGGAAATTCTGAGGTGAGGTAAAATCAGTAAGGCA 1008
           |||||| | ||||| |||||||||||||| ||||||||||||||||||||||
Db   1461 ATAAAAACTACCAGCTAGAAACTGTAGAACACAT--TGATATGAGTTTAAATGTATA---- 1514

Qy   1009 GTTGTATTATAACCTCGTTGAAGCATTATTTTTTCATTAAATCATTTTATAATCATTTGTA 1068
           || ||||||||||||  | ||||||||||||||||| |||||||||||||||||
Db   1515 -TGCATTACACTTCCAAAAACATTTTTTCCAGTTACATAATATAAGTATATCCTTTATA 1572

Qy   1069 ACACTTCTCAGTTAATTATATAAACATCATTTAC-TTATGGTTAATTATAGCTTAGTTGTATAAG 1127
           |||||||||||| |||| ||  ||||||| || |||||||  ||| ||||||||
Db   1573 AAACTCCTCAGTTAATCATAAAGCTTCATCCTACTTTTTTGAAAAATTTTATCTTAAATTATATGTG 1632

Qy   1128 GTGGGTTTCCCACCTGGAAAAGACACAAGTAAAAAACCTCTTCGGGAGAGGAGGGAACTTGTGTTA 1187
           |||||||  |||||||||||||||||||||||||||||||||||||||||||
Db   1633 GTGGTTTTGTTGCCTAGGAAA-----ACAAACAAAAAACTCTTTGGAGAGGGAGAACTCAGTGTA 1688

Qy   1188 AACCCCACAAAAACAAAAAGTCTAACTTT-----------GTTGTATTTAATAATTAATTATTTTTAA 1213
           ||||||||||||||||||||||||||
Db   1689 AATACCACAAAAACAAAGCCTAACTTTCTGTTGGGACCAAAATTGTTTTAAATTAATTATTTTTTA 1748

Qy   1214 --------------------------------- 1213
           
Db   1749 TTGATGAATTAAAAAGTATATATATTTATTGTGTACAATATGATGTTTTGAAGTATGTAT 1808

Qy   1214 --------------- 1213
           
Db   1809 ACATTGCAGAATGGACAAATGGACAGACCAAAATTTTATACCTTGTCCTGATTATTTGCA-TTTT 1867
```

```
Db   1809 ACATTGCAGAATGGACAAATGGACAGACCAAAATTTTATACCTTGTCCTGATTATTTGCA-TTTT 1867
           ||||||||||||  || |||| |||||||||||||||| ||||||| ||||  ||||
Qy   1257 TAAAATCTTCCTCATTTAGCACCAACTGTGCATTAAAAGAAGTTTTCAGGGGTTAGACAC 1316
Db   1868 AAAAAATTTTCCTCATTTAGCACCAAACTGTGCACTGAAGAAATCTTTCAGGGAATTAGGCAC 1927
           |  |||||||| ||  |||||||||  ||||||||| |||| ||| ||||| | ||
Qy   1317 ATTGAAGAACCCAAACTGCCCACCGGGGAGGGAGGCTCGTGGATAAAACTAATTCCAAAAACTGTCTTT 1376
Db   1928 ACTGGGAGAGTCAAAACTGTGCAAGGGGGTACTCGTGAAAGACTATTCAAAAAAACTTGTCTTT 1987
           |||||||| ||||||||||||||||||||||||||||||||||||||||
Qy   1377 AATAAAAGAACACATAGGAGCGCCAAAAAAGTAAGCATTAAAGACATTGGCCAAAAACTTAAGT 1436
Db   1988 AATAAAAGAAATACATTGACGGCGCCAAAAAAGTAAGTTACACACATT-----CAATGGAAGCT 2042
           ||||||||| |||| ||   |||||||||||||||| ||||||||    ||||| |||
Qy   1437 ATATTTGTCTGACTCTCCCTGTTTTTTTTTTTTTTTTTTACACAGTTTCCTA 1496
Db   2043 ATATTTGTCTCGGCGTGTCGCCTATTTCTAT------GGAATGACAGTTTCCTG 2088
           |||||||||    || |||   ||||| ||      |||||||||||||||
Qy   1497 CAATATCT-----CCTCTGTTCTTTTAACAGAAAAGGTGTGCCAGAAGAAGAATGGAGAG 1550
Db   2089 TAATACCTATGTGCATTTTCTTTTTCACAGAAAAAGTGTGGAGAGAAGAGACGGAGAG 2148
           ||||| || |||  ||||||||||||||||||||||| ||||||||||||| ||||||
Qy   1551 TGACAAAGTTCCTAGACTACCTGCACAGTATTCCTTGGTGTAATAAAACACCGAGTGGGACAC 1610
Db   2149 TAAACCAATTCCTAGACTACCTGCACAGTTTCTTGGGTGTAATGAACACCGAGTGGGATAA 2208
           ||| || ||||||||||||||||||||| |||||||||||| |||||||||||||
Qy   1611 CGGAAAGTTGAGAACAAAACCGCCTTATTGTGTAGTGGAAGATGTTTTGGGG 1657
Db   2209 TAGAAAGTTGAGACTAAAACTGGTTTGTTGCAGCCAAAGAGATTTTGGAG 2255
```

RESULT 7
ABD20523
ID   ABD20523 standard; DNA; 4057 BP.
XX
AC   ABD20523;
XX
DT   29-JUL-2004 (first entry)
XX
DE   Human pulmonary and inflammatory target DNA #134.
XX
KW   Human; antisense; bronchoconstriction; allergy; hyposecretion; pain;
KW   respiratory tract inflammation; adenosine sensitivity; lung; cancer;
KW   surfactant depletion; antiallergic; antiinflammatory; antiasthmatic;
KW   analgesic; hypotensive; immunosuppressive; cytostatic; cystic fibrosis;
KW   beta-adrenergic agonist; respiratory disease; pulmonary vasoconstriction;
KW   respiratory distress syndrome; allergic rhinitis; pulmonary hypertension;
KW   emphysema; chronic obstructive pulmonary disease; cancer; bronchitis;
KW   pulmonary transplantation rejection; ds.
OS   Homo sapiens.
XX
PN   WO20285309-A2.
XX
PD   31-OCT-2002.
XX
PF   23-APR-2002; 2002WO-US013143.
XX
PR   24-APR-2001; 2001US-0286036P.
XX
PA   (EPIG-) EPIGENESIS PHARM INC.
XX
PI   Nyce JW, Li Y, Sandrasagra A, Katz B, Pabalan J, Aguilar D;
PI   Miller S, Tang L, Shahabuddin S;
XX
DR   WPI; 2003-093058/08.
XX
PT   Pharmaceutical composition for treating asthma, has antisense
PT   oligonucleotide containing less percentage of adenosine, targeted to
PT   nucleic acids associated with lung airway or lung dysfunction, and
PT   bronchodilating agent.
XX

```
PS   Claim 15; SEQ ID NO 11916; 763pp; English.
XX
CC   This invention describes a novel composition (a) a first active agent,
CC   comprising oligonucleotides, effective for alleviating
CC   bronchoconstriction, respiratory tract inflammation, allergies and
CC   reducing adenosine sensitivity, levels of adenosine (A) or (A) receptors,
CC   surfactant depletion or hyposecretion, when administered to a mammal. The
CC   oligonucleotides are derived from a gene encoding or regulating
CC   expression of a target polypeptide associated with lung airway or lung
CC   dysfunction or cancer and can be anti-sense to the corresponding mRNA.
CC   The invention also describes a kit, that comprises: (a) a delivery
CC   device, in separate containers, (b) the oligonucleotides, (c)
CC   instructions for adding a carrier and for use of the kit. The composition
CC   of the invention has antiallergic, antiinflammatory, antiasthmatic,
CC   analgesic, hypotensive, immunosuppressive and cytostatic activity, is a
CC   beta-adrenergic agonist. The composition is useful for preventing or
CC   treating a respiratory, lung or malignant disease. The administered
CC   composition comprises oligo and is administered to reduce the production
CC   or availability, or to increase the degradation of the target mRNA or to
CC   reduce the amount of target polypeptide present in the lungs. The
CC   oligonucleotides and/or surfactant hypoproduction and/or lung
CC   inflammation, allergies and/or bronchoconstriction and/or lung
CC   with a disease or condition such as pulmonary vasoconstriction,
CC   inflammation, allergies, asthma, impeded respiration, respiratory
CC   distress syndrome, emphysema, pain, cystic fibrosis, allergic rhinitis,
CC   hypertension, emphysema, chronic obstructive pulmonary disease, pulmonary
CC   transplantation rejection, pulmonary infections, bronchitis or cancer.
CC   The reduced adenosine content of the anti-sense oligos corresponding to
CC   thymidines present in the target RNA serves to prevent the breakdown of
CC   the oligonucleotides into products that free adenosine into the system
CC   e.g., lung, brain, heart, kidney, etc, tissue environment and thereby, to
CC   prevent any unwanted effects due to it
XX
SQ   Sequence 4057 BP; 1303 A; 683 C; 796 G; 1275 T; 0 U; 0 Other;

Query Match      38.3%;  Score 634.6;  DB 11;  Length 4057;
Best Local Similarity   68.6%;  Pred. No. 1.5e-115;
Matches 1226;  Conservative  0;  Mismatches 374;  Indels 187;  Gaps 18;
```

The page continues with a long Query (Qy) / Database (Db) nucleotide sequence alignment, shown in paired rows with match bars (|) between them and position numbers at each end. Representative position numbers for the aligned blocks include:

```
Qy      1  AGGCAAACACTGACACATTTCAGAGTGTATGAGAATGCTTCTGAATTGAGTTTGCTAGCTC     60
           |||||||||||||||||||||||||||||||| | |||||||||||||||||||||||||
Db   1004  TCATTAGTAGTATCATTGGAATCTATTTAATTTCTATATGGGTGCTGT            1063
```

(The remaining alignment rows pair Qy and Db sequence segments through positions up to approximately Qy 1303 / Db 2088.)

```
Qy   1497 CAATATCT------CCTCTGTTCTTTTAACAGAAAAAGGGGTGGTCAGGAGAAAAAGATGGAGAG 1550
          |||||||      |||| ||| || |||||||||     |||||| |||||||||||  |||||||
Db   2089 TAATACCTTATTGTCATTTTCTTTTTCAGAAAAAGTGTGGGAGAAGAAAGACGGAGAG 2148
Qy   1551 TGACAAAGTTCCTAGACTACCTGCCAAGTATTATTCTTTGGTGTAATAAACACCGAGTGGACAC 1610
          |||  ||||| |||||||||||||||  || | || ||||||||| ||| ||||||||||||
Db   2149 TAAACCAATTCCTAGACTACCTGCCCAAGAGTTTCTTGGTGTPATGAACACCGAGTGGATAA 2208
Qy   1611 CGGAAAGTTGAGAACAAAAACCGGCTTATTTGTGTAGTGGAGAGATTTTGGAG 1657
          ||||||||| ||||| |||| |||| || ||| |||| ||||| |||||||||
Db   2209 TAGAAAGTTGGAGACTAAACTGGTTTGTTGCAGCCAAAGATTTTTGGAG 2255
```

RESULT 8

```
ID   ABD20522   standard; DNA; 4057 BP.
XX
AC   ABD20522;
XX
DT   29-JUL-2004 (first entry)
XX
DE   Human pulmonary and inflammatory target DNA #133.
XX
KW   Human; antisense; bronchoconstriction; allergy; hyposecretion; pain;
KW   respiratory tract inflammation; adenosine sensitivity; lung; cancer;
KW   surfactant depletion; antiallergic; antiinflammatory; antiasthmatic;
KW   analgesic; hypotensive; immunosuppressive; cytostatic; cystic fibrosis;
KW   beta-adrenergic agonist; respiratory disease; pulmonary vasoconstriction;
KW   respiratory distress syndrome; allergic rhinitis; pulmonary hypertension;
KW   emphysema; chronic obstructive pulmonary disease; cancer; bronchitis;
KW   pulmonary transplantation rejection; ds.
XX
OS   Homo sapiens.
XX
PN   WO20028309-A2.
XX
PD   31-OCT-2002.
XX
PF   23-APR-2002; 2002WO-US013143.
XX
PR   24-APR-2001; 2001US-0286036P.
XX
PA   (EPIG-) EPIGENESIS PHARM INC.
XX
PI   Nyce JW, Li Y, Sandraaagra A, Katz E, Pabalan J, Aguilar D;
PI   Miller S, Tang L, Shahabuddin S;
XX
DR   WPI; 2003-093058/08.
XX
PT   Pharmaceutical composition for treating asthma, has antisense
PT   oligonucleotide containing less percentage of adenosine, targeted to
PT   nucleic acids associated with lung airway or lung dysfunction, and
PT   bronchodilating agent.
PS   Claim 15; SEQ ID NO 11915; 763pp; English.
```

CC   This invention describes a novel composition (a) a first active agent,
CC   comprising oligonucleotides, effective for alleviating
CC   bronchoconstriction, respiratory tract inflammation, allergies and
CC   reducing adenosine sensitivity, levels of adenosine (A) or (A) receptors,
CC   oligonucleotides are derived from a gene encoding or regulating
CC   expression of a target polypeptide associated with lung airway or lung
CC   dysfunction or cancer and can be anti-sense to the corresponding mRNA.
CC   The invention also describes a kit, that comprises: (a) a delivery
CC   device, in separate containers, (b) the oligonucleotides, (c)
CC   instructions for adding a carrier and for use of the kit. The composition
CC   of the invention has antiallergic, antiinflammatory, antiasthmatic,
CC   analgesic, hypotensive, immunosuppressive and cytostatic activity, is a
CC   beta-adrenergic agonist. The composition is useful for preventing or
CC   treating a respiratory, lung or malignant disease. The administered
CC   composition comprises oligo and is administered to reduce the production

CC   or availability, or to increase the degradation of the target mRNA or to
CC   reduce the amount of target polypeptide present in the lungs. The
CC   pulmonary obstruction, allergies and/or surfactant hypoproduction are associated
CC   with a disease or condition such as pulmonary vasoconstriction,
CC   inflammation, allergies, asthma, impeded respiration, respiratory
CC   distress syndrome, pain, cystic fibrosis, allergic rhinitis, respiratory
CC   hypertension, emphysema, chronic obstructive pulmonary disease, pulmonary
CC   transplantation rejection, pulmonary infections, bronchitis or cancer.
CC   The reduced adenosine content of the anti-sense oligos corresponding to
CC   the oligonucleotides into the target RNA serves to prevent the breakdown of
CC   thymidines present in the target RNA serves to prevent the system
CC   the reduced adenosine content of the anti-sense oligos corresponding to
CC   e.g. lung, brain, heart, kidney, etc, tissue environment and thereby, to
CC   prevent any unwanted effects due to it

```
XX
SQ   Sequence 4057 BP; 683 A; 796 C; 1275 G; 1275 T; 0 U; 0 Other;

Query Match             38.3%;  Score 634.6;  DB 11;  Length 4057;
Best Local Similarity   68.6%;  Pred. No. 1.5e-115;
Matches 1226;  Conservative   0;  Mismatches 374;  Indels 187;  Gaps 18;

Qy      1 AGGCAAAACACTGAAACATTTCAGAGCTATAGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTC 60
          |||||||  ||| ||||| |||||||| |||||| |||| ||||| ||||||||||||||||||
Db    526 AGGCAAACGCAGAACGTTTCAGAGCCATAGAGGATGCGTTCTGCATTTGAGTTTGCTAGCTC 585

Qy     61 TTGGGGCGTGCCCTTATGTTTCTGCCCTTTCCGTGRAGAAAATCCATAGAATAGACTGGTGGCAG 120
          |||||  | |||| || ||| | ||||| || ||| ||||| ||| ||| |||| ||| ||||
Db    586 TTGGGAGCTGCCTACGTGTATGGCCATCCCCACAGAATTCCACAAAGTGCATTGGGTGAAAG 645

Qy    121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGTAATTTCT 180
          |||||||| ||||||| || ||||||||||||| |||||||| | |||| || ||||||
Db    646 AGACCTTGGCACTGCTTTCTACTCATCGAACTTCGCTGATAGCCAATGAGGTAATTTTCT 705

Qy    181 TTTTGAATTCCTTACAGTCTTTAAAATTCCATAGGGTAATTGGGTGGTGGTGGCTAGTT----- 234
          || ||| ||||||||||||| |||| | |||| |||| || |  || | ||| || ||
Db    706 TTATGATTCCTTACAGTCTGTAAAAGTGCATAAGTGAATCATTTTGTGATGGTTCACTAT 765

Qy    235 -TTTAAAGATCCATTATCAATAATGAAGTAATGAGTGTTAATAATATATAATAATGGGTAACC 293
           || | |||||| |||| | ||||| ||  | || |  | ||| | ||| || ||| ||| |||
Db    766 ATATAGAGATCTGTTATAAAAATAATAGATTCTGAG-CACATTAGTACATGGGTGATAACT 824

Qy    294 ATGTTACTTCAGAAGAATTATATTATATAAAAGTTATGAACCTTACAATACATTAAAATGAATG 353
          || ||||| ||||| |||||||||| || ||||||||||||| || |||||||| |||||||||
Db    825 ACATCACCAGCAAAACAATTCTGTTAAAAGGTTAATGAATCCTGGGTGTGTGCTGTAAAAATGATTG 884

Qy    354 TTGTTTCCTTTCTTTTTCAGAACCTGATGAATTCCTCACTCCTGAAAATAAAAAATGTAAGTT 413
           | ||||||||| || |||||| |||| ||||||| | || || ||||||||||| ||||||
Db    885 -TATTTCCTTTCCTCTCCAGACTCTGAGGGATTCCCTGTTCCCTGTACATAAAAAGTAGAGTT 943

Qy    414 AAATTATGATTTGATTAAAAATGATTAACATGAAATCAGT---TTCATATTTTAAGCTATAAA 469
          ||||||||||| | ||||||| |  ||| || || ||| |   |||| | ||||||| |||||
Db    944 AAATTATGATTCAGTAAAAATAGGCATGATAAGTAAGTRAAAATTCCCTGTTTTAAGCTGTAAA 1003

Qy    470 GTATCAGTTAACATTGGGATGATGATTTAATTTTATCTATTTGTTTTTTGTGTCGGGAGT 529
           |||||||| ||||||| | | || ||||||| ||||||||||||| ||| | ||| |||
Db   1004 TCATTAGTTATCATTGGAACTATTTAATTAATTCTATATTTGTTTCATATATGGGTGGCTGT 1063

Qy    530 AAAT-TATGTTCGTTATGAATATTTAGGAATGGTCTTACAACAATATTAAGTA 588
          ||||  | || | |||| ||| | |||||||| || |      |||| |||||
Db   1064 GAATGTCTGTACTTATAATAATATGAGGAATGACTTT------TTATCAGTA 1108

Qy    589 GAATCCATTAAGCAAGTGGATCAGGCCCCTTTTTGATGTTGTCAGTTCTCCACTCAAAG 648
          ||||||  ||| |||||||| ||||  | || | |||||||| ||  || ||| |||||
Db   1109 GAATCCTTTAAACAAGTGGATTAGGCTCTTTGGTGATGTTGGTTAAGTT-TGCCTCCAAAAG 1167

Qy    649 AGCCTCCGTCAGGCATTCTTCCAAAAGAATTCCATATTGGGTCAGAGATACTTCCTAG 708
          ||||  ||| ||| ||||||||||| || ||||| | | |||| || |||| | |||
Db   1168 AGCCATCGTGTCAGGGATTCTTCCACAGAGGATTCCACACTGAGTGAGGTCCGTGCTAG 1227

Qy    709 GCTCCAATTCACCTCTGTTGGGCTTTCCTCAGAAGGTTTTTCGAAAGTACTACGCA 768
          |||||  | ||| |||| | ||| ||||| | | |||||| ||||||| | ||||
Db   1228 TCTCCGTGCAGTTCTGAC-----TCTTTCTCACTCTAACGTCGTTTCTGAAAGTATTAGCA 1282
```

RESULT 9

```
Qy   769 ACTTGGGGTTATATTTTTAGAATTATATGGTCAGTAGAGACATGAAAATATACAGTGAAGTCCT  828
         ||||   ||| |||||||||||| ||| |||||||||||||| |||||||| |||   || ||
Db  1283 ACTCAGAATAATATATTTTTAGAACCATGATCAGTAGAGACATTAAAAATATAACAAAATGCC- 1341

Qy   829 ATATTAATAGTCACTTCCACATATTTTAAATGATTTTTAACTCTAATGGAATACATATACAT   888
         | ||||||||   ||  |  ||| |||||| |||||| ||| | |||  |  || |  ||||
Db  1342 -CTATATTAATAAATTTCTGCAATACTTAAATTAAAATAATTATGACTATATGATGGTGTTGTATGCA 1400

Qy   889 CTGGACGTATGTCATGGTCATATTAAAAATGTTAAAAATGTAATATCATTAGTCTAAAATAGA   948
         |||||  | |||| | |||| |||||||| ||  ||| || || || |||||||||||||||||
Db  1401 TTTGAATATGTCCTGGTCATATTAAAAATGTAAAATATAGTTTTATTAGTCTAAAATAGA    1460

Qy   949 ATAAAATTACCAGTAGGAGGAAATTCTGAGGTGAGGTAAATCAGTAAGGCA           1008
         ||||||  |||||  |||| | ||| |  |||| |||  ||| ||||
Db  1461 ATAAAAACTACCAGCTAGAACTGTAGAAAACACAT--TGATAGTGAGTTTAATGTAATA--- 1514

Qy  1009 GTTGTATTATACCTCGTAAGCATTTATTTTTCATTAATCATTTCATTTATATATCATTGTA  1068
         ||| ||||| | |||  | ||  || ||| || ||| ||||     || |||| |   ||
Db  1515 --TGCATTACACTTCCAAAAACATTTTTTCCAGTTACATAATAATTAAGTTATATCCTTTATA 1572

Qy  1069 ACACTTCTCAGTAATTATTATAAAACATCATTTAC-TTATTGTAATTATATACTTAGTGTAATAAG 1127
         | ||| |||||||||  | ||| ||| ||| |||   | || ||||| | ||     |  |
Db  1573 AAACTCCTCAGTAATCATATAAGCTTCATCTACTTTTTGAAAATTTACTTTAATATGTG     1632

Qy  1128 GTGGTTTCCCACCTGGAAAAGACACAAGTAGTAAAAACCTCTTGGGGAAGGGAACTTGTGTA 1187
         ||||||| | ||| ||||||     |||| | |||||||||||||| ||||||||||  |||
Db  1633 GTGGTTTGTTGCCTAGAAA-----ACAAACAAAAAACTCTTGGGAGAAGGGAACTCATGTA  1688

Qy  1188 AACCCCACAAAAAACAAAAGTCTAACTTT--------                        1213
         || |||||||||  |||||| ||||||||
Db  1689 AATACCACAAAAACAAAAGCCTAACTTGTGGACCAAAAATGTTTAATAATTATTTTTTAA 1748

Qy  1214 ------------                                                 1213
Db  1749 TTGATGAATTAAAAAGTATATATTTTTATTGTACAATATGATCGTTTTGAAGTATGTAT  1808

Qy  1214 -------------                                                1213
Db  1809 ACATTGCAGAAATGGACCAATGGACCAAAATTTTTATACCTTGTCTCTTGTTTTTTGATTGAATTATATATTTTT 1867

Qy  1257 TAAAATCTTCCTCATTTAGACCAACTGTGCCATTAAAGAAGTTTTTCAGGTATAGAGACAC 1316
         ||||||  |||||||||||| ||||||||| || ||||||| ||||||| ||||| | |||
Db  1868 AAAAATTTTCCTCATTTAGCGACCAACTGTCCACTGAAAGAAATCTTTCAGGGAATAGGCAC 1927

Qy  1317 ATTGAAGAGACCAAACTGCCCACGCGGAGGCGGCGTGTGGATAAACTAATACTATTCCAAAAACTTGTCTTT 1376
         | |||||| ||||||||| || || ||| | | ||||||| |  || |||  ||||| |||||||||||| ||
Db  1928 ACTGGAGAGTCAAAACTGTGCAAGGGGGTACTGTGTGGAAAGACTATTCAAAAAAACTTGTCCTT     1987

Qy  1377 AATAAAAGAACACATAGGAGCGCCCAAAAAAGTAAGTTAAAGCAGCATTTGGCAAAAAACTTAAGT 1436
         ||||| |||| ||||| | | || ||||||||||| || ||||  ||||     |||| ||| |
Db  1988 AATAAAGAAATACATTGACGGGCCAAAAAAGTAAGGTTACACACATT-----CAATGGAAGCT    2042

Qy  1437 ATATTTGTCTGACTCTGCCCTGTTTTTTTTTTTTTTTTTTACAAGAAATTGACAGTTTCCTA 1496
         ||||||||| || | ||||||  ||| | |                 ||||||||||||||
Db  2043 ATATTTGTTCTGGCTGTGCCCTATTTCTAT-------------------GGAATTGACAGTTTCCTG 2088

Qy  1497 CAATATCT-----CCTCTGTTCTTTTTTACAGAGAAAAGGTGTGCAGGAGAAAGAGATGGAGAG 1550
         |||| |||      ||  | || ||||| |||| |||| |  ||| ||||||| ||| |||||
Db  2089 TAATACCTATTGTCAATTTTTTTCACAGAAAAGTCTGGAGAAAGAGAAGACCGAGAG      2148

Qy  1551 TGACAAAAGTTCCTAGACTACCTGCTGCGAAGTATATTCCTTGGTGTGTAATAAACACCGAGTGGACAC 1610
         |  |  || ||||||||||||||| | ||||| | ||||||| ||| ||||||||||||||||||| | 
Db  2149 TAAACCAATTCCTAGACTACCTGCGAAGAGTTTCTTGGTGTAATAACACCGAGTGGATAA          2208

Qy  1611 CGGAAAGTTGAGACAAAACCGGCTTATTGTGTAGTGGAAGATTTTGGAG            1657
         |||||||||||||| ||||  |||| |||| | | | | |||||||||||
Db  2209 TAGAAAGTTGAGACTAAACTGGTTTTGTTGCAGCCAAAGATTTTGGAG           2255
```

```
FH   Key             Location/Qualifiers
FH
FT   variation       replace(3325,C)
FT                   /tag= b
FT   variation       replace(3430,G)
FT                   /tag= c
FT   variation       replace(3453,A)
FT                   /tag= d
FT   variation       replace(3825,A)
FT                   /tag= e
FT                   /standard_name= "Single nucleotide polymorphism"
FT   CDS             4071..5738
FT                   /tag= a
FT                   /product= "interleukin 5"
FT                   /note= "The CDS is specifically claimed in claim 24"
FT                   /standard_name= "Single nucleotide polymorphism"
FT   exon            4071..4214
FT                   /tag= f
FT                   /number= 1
FT   variation       replace(4359,G)
FT                   /tag= h
FT                   /number= 1
FT   intron          4215..4422
FT                   /tag= g
FT                   /number= 1
FT   exon            4423..4455
FT                   /tag= i
FT                   /number= 2
FT   intron          4456..5405
FT                   /tag= j
FT                   /number= 2
FT   variation       replace(5389,T)
FT                   /tag= k
FT   exon            5406..5534
FT                   /tag= l
FT                   /number= 3
FT   variation       replace(5507,C)
FT                   /tag= n
FT   intron          5535..5639
FT                   /tag= m
FT                   /number= 3
FT   exon            5640..5738
FT                   /tag= o
FT                   /number= 4
FT   variation       replace(5717,A)
FT                   /tag= p
FT                   /standard_name= "Single nucleotide polymorphism"
```

```
PI   Bentivegna SC, Chew A, Choi JY, Denton RR, Kazemi A;
PI   Nandabalan K, Parks KE;
XX
DR   WPI; 2002-041289/05.
DR   P-PSDB; AAU10353.
XX
PT   New haplotypes of the human interleukin 5 (IL5) gene, useful to diagnose and
PT   treat diseases associated with the gene including inflammatory disorders
PT   such as asthma.
XX
PS   Claim 19; Fig 1; 65pp; English.
XX
CC   The invention relates to haplotyping the human interleukin 5 (IL5) gene
CC   of an individual, comprising determining if the individual has one of the
CC   IL5 haplotypes or haplotype pairs fully defined in the specification.
CC   Haplotyping the IL5 gene of an individual, comprises determining the
CC   identity of the nucleotide at two or more polymorphic sites in one copy
CC   of the gene. The method also involves identifying an association between
CC   a trait and a haplotype or haplotype pair of the IL5 gene, comprising
CC   comparing the frequency of the haplotype/pair in a population exhibiting
CC   the trait with that of a reference population. A higher frequency in the
CC   trait population indicates the trait is associated with the haplotype.
CC   The polynucleotides and screened compounds are useful to develop
CC   treatment for diseases associated with IL-5 activity including
CC   inflammatory disorders such as asthma. The present sequence represents
CC   the coding sequence of interleukin 5 (IL5) as described in the method of
CC   the invention
XX
SQ   Sequence 9738 BP; 2808 A; 2015 C; 1982 G; 2933 T; 0 U; 0 Other;

Query Match             38.3%;  Score 634.6;  DB 6;  Length 9738;
Best Local Similarity   68.6%;  Pred. No. 1.7e-115;
Matches 1226;  Conservative 0;  Mismatches 374;  Indels 187;  Gaps 18;

Qy      1 AGGCAAACACTGAACATTTCAGAGCATTTGAGAATGCTTCTGAATTGAGTTTGCTAGCTC 60
          ||||||||  || |||| ||||||| || | |||  | | ||  || ||||||| |||
Db   4045 AGGCAAACCGAGAACGTTTCAGAGGCCATGAGCAGTTAGGCTCTTCGAATTGAGTTGCTA 4104

Qy     61 TTGGGGCTGCCTAGTTGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGGCAG 120
          ||||| ||||| |||||||| || |||| | | |||||| || |||| || | || |
Db   4105 TTGGAGCTGCCTACGTGTATGCCATCCCCACAGAAATTCCCACAAGTGCATTGGTGTAAAG 4164

Qy    121 AGACCTTGACACTGTCTCCACTCATCATCGAACTTGGCTGTAGGCCGATGGGGGTAATTTCT 180
          || || ||| |||| || || ||| | ||  |||| | |  ||| | |||  ||| | |
Db   4165 AGACCTTGGCACTGCTTTCTCATCGAACTCTCGTGTGATGAGCCAATGAGGTAATTTTCT 4224

Qy    181 TTTTGATTCCTACAGTCTTTAAAAATCCATGGGTAATTGGTGTGGGTGGGCTAGTT----- 234
          ||| |||  |||| ||    |  | |||  | |||  |||| || ||| ||||||
Db   4225 TTATGATTCCTACAGTCTGTAAAAGTGCATTGGAATCATTGTGTTCCTTACTAT 4284

Qy    235 -TTTAAGATCCATTATCAATAATGAAGTAAATGAGTGTTAATAATATATAATGGGTAACC 293
           ||||||| |  | | ||| | |   |  || |   |    |  |  | |||||
Db   4285 ATATAGAGATCTGTTATAAATATAAATAAAGATTCTGAG--CACATGATACATGGGTGATAACT 4343

Qy    294 ATGTTACTCAGAGAAGAATTATATATAAAAAAGTTATGAACCTTACAATACAATACATTGAAATG 353
          | | | || ||| | |  | | |  |  ||||| || ||||  | |  |   |||  ||||
Db   4344 ACATCACCAGCAAACATTCTGTTAAAAGTTATGAAGCTGGTGTCGTGTAAAAATGAATTG 4403

Qy    354 TTGTTTCCTTTCTTTTCAGAACCTGATGAATTCCTACTCCTGAAAATAAAAGTAAGTT 413
          |||| |  ||| | || ||  |||| |||| | ||  || |||| |  | | |||||
Db   4404 -TATTTCCTTTCCTCTCCAGACTCTTGGAGGATTCGCCTAGTTCTCCAAAACTTAAGTT 4462

Qy    414 AAAATTATGATTTGATAAAAATGATTACATGAATCAGT---- 469
          |||| | |||| |   | ||||| ||  |||| ||  |
Db   4463 AAATTTATGATTCAGTGAAAATGATGGCAATAAGTTAACAGTTAACACATTA 4522

Qy    470 GTATCAGTTAACATTGGGATGATTTAATTATTTTATCTATTTTGTTGTGTCGGCGGATGT 529
          | || ||||||| |   | ||  |  ||| ||||| | |||||  |  | | ||  | |
Db   4523 TCATTAGTTATTCATTGGAACTATTTAATTTTCTATATTTCCTATATGGGTGCCTAG 4582

Qy    530 AAAT-TATGTGCTTATGAATATTAGGAATGGGTTCTACAATATATTAAGTA 588
          |||| |  || |  | |||  |||| ||  || | ||  |    | |||
Db   4583 GAAGTCTGTACTTATTATAAAATATGAGGAATGACTTT--------TTATCAAGTA 4627

Qy    589 GCTCCATTCACCTTCTGTCGGTTGGCTTTCCTCACCTTCAAACGTTTTTTCTGAGAACTAAGCA 648
          |   | ||| | |  |||  ||||| ||| | ||| | |||   || |||| || | | ||||
Db   4628 GAAATCCTTTAAACAAGTGGATTTAGGCTTCTTCCCAGAATTCCATATTTTTGATGTTGTCAATCTCAAAG 4686

Qy    649 AGCCTCGTGTCAGGCGCATTCTTCTTCCAAAGAATTCCATATTGGGTGTTGTTAGTTCCTAG 708
          || |  | | ||| ||| ||| ||   |||||| || ||| || |||||||||| ||  |
Db   4687 AGCATCGTGTCAGGGATTCTTTCCAGAAGGATTCCACACTCAGTGTTGTTAGTT-TGCCTCCCAAAG 4746

Qy    709 GCTCCATTCACCTCTCGTTGGGTCGGTTGGGTTTCCTCACCTCAAACGTTTTTTCTGAAAGTAACTGCA 768
          |||||||| | |  |  |||    | ||||| |||| || ||| ||| ||||| || |  || ||||
Db   4747 TCTTCCGTTGCAGTTGCAGACTCTGAAGGTGTTCCTTACTCAAGTAGTTCGAACTTTCTGAAAGTATTGCA 4801

Qy    769 ACTTGGGGTTATATAATTTTTTTAGAATTATGGTCAGTAGAGACATGAGAAAATATACAGTGAGTTCCT 828
          ||||||| ||| | || | | | |||| ||  | |||||  ||| | |||||  || | ||
Db   4802 ACTTCAGAATTATTATTTTTAGAACCATGACAGTGAGTTAGTTAAATATATTACAGTGAAAATGCC- 4860

Qy    829 ATATTAATAAGTCACTTCCACATATTTATTTAAAATGAGTTTTAACTCATTGAAATGAATCATATACAT 888
          | |||||| | | | | |||  | | | ||||| | || ||| | | ||| || |  | ||| | ||
Db   4861 -CTATAATAATTTCTGCATACTTAAAAATAATGATGATTTAAAAATGTGGAAATTATTGTCATATATATATA 4919

Qy    889 CTGGACTGATGTGCATGTGTCATTGTAATTAATTAAAATGTTAAAAATGTTGATATCATTAGGTGTATGCA 948
          |||  | || | ||| |  || | |||| | || ||||| |||||| ||| |||| | ||| ||||||| |
Db   4920 TTTGAATATGTCCTGGTCATTAATAAAATGTAAAATATATAGTTGTCATTAAAATAGA 4979

Qy    949 ATAAAATTACCAGCTAGAACTATACGGAGAAATTCTGAGGTGAGGTAAATCAGTAAGGCA 1008
          |||||| ||||||  ||||  | || ||||| ||  ||| || |||| |  | ||| |
Db   4980 ATAAAAACTACCAGCTAGAACTGTGAAAACAT--TGATATGAGTTTAAGTATTAA---- 5033

Qy   1009 GTTGTTATTATACCTCGTAAGCATTTTATTTTTGCATTTAATCATTTCATTTATATCATTGTA 1068
          |  |  |||| ||    |  || | | | || || |  ||  |   ||| | | |  |||
Db   5034 --TGCATTACACTTCCAAAACATTTTTTCCAGTTACATAATAATTAAGGTTATATCCTTTATA 5091

Qy   1069 ACACTTCTCAGTAATTATATAATAAACATCATTTAC-TTATGGTTAATTATAGCTTAGTATGAAG 1127
          ||| | |||  | | ||| | ||||  |  |||  | ||  || ||  |||| | | ||| | |
Db   5092 AAACTCCTCAGTTAATCATATCTACTTTTTGAAAATTTTATCTTAATAAAGTTCA-TTTT 5151

Qy   1128 GTGGGTTTCCCACCTGGAAAAGCACAAGGTAAAAACCTCTGGGAGGAAGGGAACTTGGTGTA 1187
          ||||| || |||  |||| | || ||  || ||| |||| ||| | ||  | | | | |
Db   5152 GTGGGTTTGTGCCTAGAA----ACAAACAAAAACTCTTTGGGAGAAGGGGAACTCATGTA 5207

Qy   1188 AACCCCACAAAAACAAAGTCTAACTTT------- 1213
          || ||| | ||| |||| | | || |
Db   5208 AATACCACAAAAACAAAGCCTAACTTTGTGGGACCAAAAATTGTTTAAATAATAATTGTTTTTAA 5267

Qy   1214 ------------------TTGGACCAAAATTTTTATGCCTTGTTGTTGATGAATTATTTT 5327
Db   5268 TTGATGAATTAAAAAGTATATATATTATTGTACAAATATGATGTTTTGAAGTAGTGTAT 5327

Qy   1214 --------------------------------- 1213
Db   5268 ... 

Qy   1214 ACATTGCAGAATGGACAATGGCCCAAAAAAGTAGGGGGTACTGTGGGAAAGACTATTCAAAGTTGTCCTT 1256
          | ||||  || ||  |  | | |||| |||| ||||||| | |  | |   ||| | || |
Db   5328 ACATTGCAGAATGGACAATGGCCCAAAAAAGTAGGGGGTACTGTGGGAAAGACTATTCAAAGTTGTCCTT 5386

Qy   1257 TAAAACTTCCTCATTTAGCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTTATAGACAC 1316
          |||| |||| || || ||||| |||| | |||| || || | || |||| |||| |||
Db   5387 AAAAATTTTTCCTTCATTTAGCACCAACTGTGCACTGAAGAAATCTTTCAGGGAAATAGGCAC 5446

Qy   1317 ATTGAAGAACCAAAACTGCCCACGGGGAGGAGGCGTGGATAAACTATTCCAAAACTTGTCTTT 1376
          ||||| || | | | | | | | ||| ||||  | || | || || |||| |  |||  |||
Db   5447 ACTGGAGAGTCAAACTGTGCAAGGGGTGTACTGGAGAAAGACATTCAAAAACCTTAAGT 5506

Qy   1377 AATAAAAGAAACACATAGAGCGGCCCAAAAAGTAAGTAAAGTTAAAGACAACATTTGGCAAAAACTTAAGT 1436
          |||||| | | ||||  | | | ||| |||| | |  | || | | |  ||| ||| |||  | ||| |
Db   5507 AATARAAGAAAATACATTGACGGGCCCAAAAAGTRAGTTAGTTACAGCATT----CAATGGAAGCT 5561

Qy   1437 ATATTTGTCTCACTCTGCCCTCTGTTTTTTTTTTTTTTTTTTTACAAGAATTGACAGTTTCCTA 1496
          | |||||||  || |||| | |||  || ||   | || ||||| |  |  |||||||| | |
Db   5562 ATATTTGTCTGGCTTGTGCCTCATTT-------------GGAATTGACAGTTCCCTG 5607

Qy   1497 CAATATATCT-----CCTCTGTTCTTTTTACAGAAAAAAAGGTGTGCAGGAGAGAAGAAGATGGAGAG 1550
          ||| |||  |     ||| |  || || | ||| | | | | | || ||| | ||| | | || | |
Db   5608 TAATACCTATTGTCATTTTCTTTTTTTTCACAGAAAAAAGTGTGGAGAAGAAGACGAGAG 5667
```

Qy   1551 TGACAAAGTTCCTAGACTACCTGCAGCATCAAGTATTCTTGGGTGTAATAAACACCGGAGTGGACAC 1610
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   5668 TAAACCAATTCCTAGACTACCTGCAGCATCCAAGAGTTTCTTGGGTGTAATGAACACCGGAGTGGACAC 5727

Qy   1611 CGGAAAGTTGAGAACAACCGGCTTATTGTAGTGAAGATTTTGAG 1657
           |||||||||||||||||||||||||||||||||||||||||||
Db   5728 TAGAAAGTTGAGACTAAACTCGGTTTTGTTGCAGCCAAAGATTTTGGAG 5774

RESULT 10
AAN81381

ID   AAN81381 standard; DNA; 3230 BP.
XX
AC   AAN81381;
XX
DT   25-MAR-2003 (revised)
DT   04-DEC-1990 (first entry)
XX
DE   Entire nucleotide sequence of the human B-cell differentiation factor
DE   chromosomal gene (3.2kb BamHI fragment).
XX
KW   Immunodeficiency disease; cancer therapy; interleukin; lymphocyte; ss.
XX
OS   Homo sapiens.
XX
FH   Key   Location/Qualifiers
FT   exon   553..696
FT   /tag= a
FT   exon   905..937
FT   /tag= b
FT   /note= "Exon 1"
FT   exon   1883..2011
FT   /note= "Exon 2"
FT   /tag= c
FT   exon   2118..2216
FT   /note= "Exon 3"
FT   /tag= d
FT   /note= "Exon 4"
XX
PN   EP261625-A.
XX
PD   30-MAR-1988.
XX
PF   21-SEP-1987; 87EP-00113774.
XX
PR   20-SEP-1986; 86JP-00223284.
PR   21-SEP-1987; 87JP-00256842.
XX
PA   (HONJ/) HONJO T.
XX
PI   Honjo T, Takatu K, Severinson E;
XX
DR   WPI; 1988-085927/13.
DR   P-PSDB; AAP81056.
XX
PT   Recombinant human B-cell differentiation factor - used for diagnosis or
PT   treatment of immuno-deficiency diseases, various infections and cancers.
PS   Example; Fig 5(1)-5(4); 5pp; English.
XX
CC   Nucleotide sequence of the exon portions of the human BCDF chromosomal
CC   gene completely coincided with the nucleotide sequence of human BCDF cDNA
CC   (AAN81380). The BCDF is useful in the diagnosis or treatment of e.g.
CC   immunodeficiency diseases occuring due to the deficiency of this factor
CC   in a living body and also in the treatment of various infections and
CC   cancers. (Updated on 25-Mar-2003 to correct PR field.)
XX
SQ   Sequence 3230 BP; 1027 A; 545 C; 622 G; 1036 T; 0 U; 0 Other;

Query Match   36.2%; Score 600.6; DB 1; Length 3230;
Best Local Similarity 67.8%; Pred No. 7.4e-109;
Matches 1212; Conservative 0; Mismatches 384; Indels 191; Gaps 19;

Qy   1 AGGACCTTGACACTGCTCTCCACTCATCGACTTGGCTGATAGGGCGGATGGGGGTAATTTCT 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   527 AGGCAAAACGCAGAACAGTTTCAGAGCGTTCTGAAATTTGAGTTTGCTCAGCTC 586

Qy   61 TTGGGGCTGCCTCTATGTTTCTCGCCTTGCTGTAGAAAATCCCATGATAGACTGGGTGGCAG 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   587 TTGGAGCTGCCTACGTGTATGCCCATCCCCCACAGAAAATTCCCACAAAGTGCATTGGTGAAAG 646

Qy   121 ATGTTACTCAGAAGAATTATATTAAAAGTTATGAACCTTACACAATACATTAAAAAATGAATG 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   647 AGACCTTGGCACTGCGTTTCTACTCATCGGACTCTGCTTGATAGGGTGGATTTTCT 706

Qy   181 TTTTGATTCCTACAGTCTTTAAAAATGCATGGGTAGTTAATTGGTTGGTGGTTGGGGGTGG 234
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   707 TTATGATTCCTACAGTCTTTCGCCTTTGCTGTAGAAAATCCCATAGACTATGGTTCCTTTACTAT 766

Qy   235 -TTTAAAGATCCATTATCAATATAATGAGAGTGAAGTGAGTGGTAATATATAGTGGGTAACC 293
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   767 ATATAGAGACTCTGTTGTAAAAATAAAGAAGATTCTGAG-CACATTAGTACATGGTGATAACT 825

Qy   294 ATGTTACTCAGAAGAATTATATTAAAAGTTATGAACCTTACACAATACATTAAAAAATGAATG 353
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   826 ACATCACCAGCAAACATTCTGTTAAAAAGTTATGAATGCTGGTGTCGTGCGTAAAAATGATTG 885

Qy   354 TTGTTCCTTTCTTTTTTTTCAGAACCTGATGAATTCCTACTCCTGAAAATAAAAATGTAAGTT 413
           |||||||||||||||||||||||||||||||||||||||||||||||||||
Db   886 -TATTTCCTTTCCCTCTCCAGACTCTGAAGCTCTGTTCCATCTCAAAG 944

Qy   414 AAAATTATGATTTGATAAAAATGATTTACATGAAATCAG----TTTCATATATTTAAGCTATAAA 469
           |||||||||||||||||||||||||||||||||||||||||
Db   945 AAAATTATGATTCAGTGAAAATGGGCATAGGTAATGTAATAATTGGTTGTTGAAGTTTTAAA 1004

Qy   470 GTTATCAGTTAACATTGGGATGAGATGATTTAATTTAATTTGTTTTTGTTTTATGGTGTGATGT 529
           ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1005 TCATTAGTTATCAATGGAACTATTTAATTTTCTATATTTTCATATGGGTGTGT 1064

Qy   530 AAAT-TATGTGCTTTATGAATATTAGGAAATGGTGTTAGGGAATGGCTCTACACATATTAAGTA 588
           ||||||||||||||||||||||||||||||||||||||||||||
Db   1065 GAAATGTCGTGACTTATATAAATATATGAGGAAATGGACTTT------------TTAATCAAGTA 1109

Qy   589 GAATCCATTAAGCAAGTGGAATCAGGCGCCCTTTTTGAAGTTGTCAGTTCTCCATCTCAAAG 648
           ||||||||||||||||||||||||||||||||||||||||||||||
Db   1110 GAATTCCTTTAAACACAAGGTGGATTAGGCTCTTGGATGTTGTTAGTTGCTTCCCAAAG 1169

Qy   649 AGCCTCGTGTCAGGCAGTTCTTCTTTCCAAAAGAATTCCATATTGGGTCAGAGATACTTCCTAG 708
           ||||||||||||||||||||||||||||||||||||||||||||||
Db   1170 AGCATCGTGTCAGG-ATTCTTTCCAGAAGGAATTCCACACTGAGTGAAGTGGTGGTCTGGCTAG 1228

Qy   709 GCTCCAATCACCTCGTGTCGGTTGGGCTTTCCTCCACCTCAAACGTTTTTTTGAAAGTACTAGCA 768
           ||||||||||||||||||||||||||||||
Db   1229 TCTTCTCACTCTAAACGTGTTTCTGAAAGTTATACTA 1283

Qy   769 ACTTGGGGTTATATTTTTTAGAATTTAAATTATGGGTAGACTAGACAAAATATACAGTGAGTCCT 828
           |||||||||||||||||||||||||||
Db   1284 ACTCAGAATTATATTTTTTGAACCANGATCAGTAGACACATTAAAATATATAAAATGCC- 1342

Qy   829 ATAATTAATAGTCACTTCCACATATTTAAAATGATTTTAACTCACATCATATACAT 888
           ||||||||||||||||||||||||||||||||
Db   1343 --CTATATTAATAATTCTGCATCTACACTTACTTTTAAATAATTATGAGGGTGTATGCAT 1400

Qy   889 CTGGAGTATGTCATGGTCATATTATTATTAAAAATGTTTAAAAATGTGATAATATTATTAGTGTAAATAGA 948
           ||||||||||||||||||||||||||||
Db   1401 TGAATATG---CCTGGTCATTAATTAAAAAGTGTAAAAATATTAGTGTTCAAAATAGA 1456

Qy   949 ATAAAAATTACCAGCTAGAACTATACGAAGGAAATTCGAGGTGAGGTAAATCAGTAAGGCA 1008
           ||||||||||||||||||||||||||||||||||||||||||
Db   1457 ATAAAAACTACCAGCTAGAACTGTAGAAAACACAT--TGATATGAGTTAGAAAGTAATATAGC- 1513

Qy   1009 GTTGTATTTATATCCTCGTAAGGCATTTATTTTTCATTAATCATTTCATTTATATCATTTGTA 1068
           |||||||||||||||||||||||||||
Db   1514 -----ATTACACTTCCAAAACATTTTTTCCCAGTTACATAATAATTAAGTTTATATCCTTTATA 1568

Qy   1069 ACACTTCTCAGTAATATATATAAAACATCATTTAC-TTATGGTAATATATAGCTTAGTATAAG 1127

```

```
               | ||| ||||||||| |||||| | |||| ||| || || |||| || |||| ||| |
Db   1569 AAACTCCTCAGTAATCATATAAGCTTCATCTACTTTTGAAAATTTTATCTTAATATGTG 1628

Qy   1128 GTGGTTTCCCACCTGGAAAAGACACAAGTAAAAACCTCTTGGGAGAAGGGAACTTGTGTA 1187
               ||||||| ||| |||| |||| ||||| ||||| ||||||||||||| ||||
Db   1629 GTGGTTTGTTGCCTAGAAA----ACAAACAAAAAACTCTTTGGAGAAGGGAACTCATGTA 1684

Qy   1188 AACCCCACAAAACAAAGTCTAACTTTT--------------------------------- 1214
               || ||||||||||||| ||||||||
Db   1685 AATACCACAAAACAAAGCCTAACTTTGTGGACCAAAATTGTTTTAATAATTATTTTTTAA 1744

Qy   1215 -- 1214

Db   1745 TTGATGAATTAAAAAGTATATATATTTATTGTGTACAATATGATGTTTTGAAGTATGTAT 1804

Qy   1215 ------------------TGGACCAAATTTTTATGCCTTGTTTTGATGAATTATATTTTT 1256
                                 |||||||||||||||| |||||| ||||| | | || | ||||
Db   1805 ACATTGCAGAATGGACAATGGACCAAATTTTTATACCTTGTCTTGATTATTTGCA-TTTT 1863

Qy   1257 TAAAATCTTCCTCATTTAGCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACAC 1316
                ||||| ||||||||||||||||||||||||| | ||||| | |||||||| |||| |||
Db   1864 AAAAATTTTCCTCATTTAGCACCAACTGTGCACTGAAGAAATCTTTCAGGGAATAGGCAC 1923

Qy   1317 ATTGAAGAACCAAACTGCCCACGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTT 1376
               | || ||| ||||||| || |||| ||||||| | ||||||| |||||||||| ||
Db   1924 ACTGGAGAGTCAAACTGTGCAAGGGGGTACTGTGGAAAGACTATTCAAAAACTTGTCCTT 1983

Qy   1377 AATAAAAGAACACATAGAGCGCCAAAAAGTAAGTTAAAGACATTTGGCAAAAACTTAAGT 1436
               |||||| || |||| || |||||||||||||||| | ||||| || || | |
Db   1984 AATAAAGAAATACATTGACGGCCAAAAAGTAAGTTACACACATTCAATGGAAGCTATATT 2043

Qy   1437 ATATTTGTCTGACTCTGCCTGTTTTTTTTTTTTTTTTTTACAAGAATTGACAGTTTCCTA 1496
                    || ||| | | ||| ||||||||||||||||
Db   2044 TGTCCTGGCTG------------------TGCCTATTTCTATGGAATTGACAGTTTCCTG 2085

Qy   1497 CAATATCT------CCTCTGTTCTTTTAACAGAAAAGGTGTGCAGGAGAAAGATGGAGAG 1550
                |||| || | | | |||| |||||||| ||||| || ||||||| ||||||
Db   2086 TAATACCTATTGTCATTTTTCTTTTTTCACAGAAAAAGTGTGGAGAAGAAAGACGGAGAG 2145

Qy   1551 TGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGACAC 1610
               | | | ||||||||||||||||||| |||||||||||||| ||||||||||||| |
Db   2146 TAAACCAATTCCTAGACTACCTGCAAGAGTTTCTTGGTGTAATGAACACCGAGTGGATAA 2205

Qy   1611 CGGAAAGTTGAGAACAAACCGGCTTATTGTAGTGGAAGATTTTGGAG 1657
                 ||||||||||| |||| || || ||| || ||||||||||||
Db   2206 TAGAAAGTTGAGACTAAACTGGTTTGTTGCAGCCAAAGATTTTGGAG 2252

RESULT 11
AAQ74056
ID   AAQ74056 standard; DNA; 3230 BP.
XX
AC   AAQ74056;
XX
DT   29-JAN-1996 (first entry)
XX
DE   Human interleukin-5.
XX
KW   Interleukin-5; primer; mRNA; specificity; pharmaceutical; ss.
XX
OS   Homo sapiens.
XX
PN   JP07123984-A.
XX
PD   16-MAY-1995.
XX
PF   05-NOV-1993;   93JP-00275852.
XX
PR   05-NOV-1993;   93JP-00275852.
XX
PA   (HITB) HITACHI CHEM CO LTD.
XX
DR   WPI; 1995-211627/28.
XX
PT   A primer for the detection and the determn. of a specific messenger RNA -
PT   can detect and determine specific mRNA(s) with high reliability.
XX
PS   Example 22; Page 22-24; 35pp; Japanese.
XX
CC   AAQ74056 is the human interleukin-5 gene. This gene is amplified by the
CC   primers AAQ74031-Q74032. The primers are used specifically for the
CC   detection and isolation of this sequence. They have the advantage of high
CC   sensitivity and reliability and are useful in the pharmaceutical industry
XX
SQ   Sequence 3230 BP; 1027 A; 545 C; 622 G; 1036 T; 0 U; 0 Other;

  Query Match   36.2%; Score 600.6; DB 2; Length 3230;
  Best Local Similarity   67.8%; Pred. No. 7.4e-109;
  Matches 1212; Conservative   0; Mismatches 384; Indels 191; Gaps   19;

Qy   1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
               |||||||| | |||| ||||||||| ||||| ||||||||| ||||||||||||||||||
Db   527 AGGCAAACGCAGAACGTTTCAGAGCCATGAGGATGCTTCTGCATTTGAGTTTGCTAGCTC 586

Qy   61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAG 120
               |||| |||||||| || | |||| | | ||||| ||||| | | | ||||| ||
Db   587 TTGGAGCTGCCTACGTGTATGCCATCCCCACAGAAATTCCCACAAGTGCATTGGTGAAAG 646

Qy   121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGTAATTTTCT 180
               |||||||| ||||||| || |||||||||||| |||||||| | ||| |||||||||||
Db   647 AGACCTTGGCACTGCTTTCTACTCATCGAACTCTGCTGATAGCCAATGAGGTAATTTTCT 706

Qy   181 TTTTGATTCCTACAGTCTTTAAAATGCATGGGTAATTGGTGGTGGTGGCTAGTT------ 234
               || ||||||||||||||| |||| ||||| |||||| | ||| ||| | ||
Db   707 TTATGATTCCTACAGTCTGTAAAGTGCATAGGTAATCATTTGTGATGGTTCCTTTACTAT 766

Qy   235 -TTTAAAGATCCATTATCAATAATGAAGTAATGAGTGTTAATAATATATAATGGGTAACC 293
                | || ||||| |||| |||||| | | |||| | || || || | ||||
Db   767 ATATAGAGATCTGTTATAAATAATAAGATTCTGAG-CACATTAGTACATGGGTGATAACT 825

Qy   294 ATGTTACTCAGAAGAATTATATTAAAAGTTATGAACCTTACAATACATTAAAAATGAATG 353
               | | || || ||| | |||||||||||||| | | | ||||||||| ||
Db   826 ACATCACCAGCAAACATTCTGTTAAAAGTTATGAATGCTGGTGTGCTGTAAAAATGATTG 885

Qy   354 TTGTTTCCTTTCTTTTTCAGAACCTGATGATTCCTACTCCTGAAAATAAAAATGTAAGTT 413
                | ||||||||| | | |||| |||| ||||||| ||||| | |||||||||||||||
Db   886 -TATTTCCTTTCCTCTCCAGACTCTGAGGATTCCTGTTCCTGTACATAAAAATGTAAGTT 944

Qy   414 AAATTATGATTTGATAAAATGATTACATGAATCAG----TTTCATATTTTAAGCTATAAA 469
               ||||||||||| ||||||||| ||||||| || |||| | ||||||||| ||||
Db   945 AAATTATGATTCAGTAAAATGATGGCATGAATAAGTAAATTTCCTGTTTTAAGCTGTAAA 1004

Qy   470 GTATCAGTTAACATTGGGATGATTTAATTTTATCTATTTTGTTTTTATGTGTGCGGATGT 529
                 || ||||| |||||| | |||||||||| | ||||||||||| || || | | |||
Db   1005 TCATTAGTTATCATTGGAACTATTTAATTTTCTATATTTTGTTTTCATATGGGTGGCTGT 1064

Qy   530 AAAT-TATGTGCTTATGAATATTAGGAATGGTGTTAGGAATGGCTCTACAATATTAAGTA 588
                ||| | ||| ||||| ||||| ||||||| || ||| |||||
Db   1065 GAATGTCTGTACTTATAAATATGAGGAATGACTTT---------------TTATCAAGTA 1109

Qy   589 GAATCCATTAAGCAAGTGGATCAGGCCCTTTTTTGATGTTGTCAGTTCTCCATCTCAAAG 648
               |||||| |||| ||||||||| |||| |||| ||||||||| |||| || || |||||
Db   1110 GAATCCTTTAAACAAGTGGATTAGGCTCTTTGGTGATGTTGTTAGTTTGCCTTCCCAAAG 1169

Qy   649 AGCCTCGTGTCAGGCATTCTTTCCAAAAGAATTCCATATTGGGTCAGAGATACTTCCTAG 708
               ||| |||||||||| |||||||||| ||| |||||| | || || |||| | | | ||||
Db   1170 AGCATCGTGTCAGG-ATTCTTTCCAGAAGGATTCCACACTGAGTGAGAGGTGCGTGCTAG 1228

Qy   709 GCTCCATTCACCTCTGTCGTTGGCTTTCCTCACCTCAACGTTTTTCTGAAAGTACTAGCA 768
                |||| | || |||| | || ||||| ||||| |||||||||||| |||||
Db   1229 TCTCCGTGCAGTTCTGAC-----TCTTTCTCACTCTAACGTGTTTCTGAAAGTATTAGCA 1283

Qy   769 ACTTGGGGTTATATTTTTAGAATTATGGTCAGTAGACATGAAAATATACAGTGAAGTCCT 828
               ||| | |||||||||||||| ||| ||||||||||| |||||||| | || ||
Db   1284 ACTCAGAATTATATTTTTAGAACCATGATCAGTAGACATTAAAATATATAACAAATGCC- 1342
```

Qy    829 ATATTAATAAGTCACTTCCACATATTTAAATGATTTTAACTCTAATGGAATCATATACAT 888
          ||   ||||| ||   ||  || ||  ||||||  ||  || | | || |||||| | ||
Db   1343 --CTATATTAATTAATTCTGCATACTTAAATAAATAATAATTATGACTATATGTGTATGCAT 1400

Qy    889 CTGGAGTATGTCATGTGTCATATTAAATGTTTAAAATGTTGATATCATTAGTTCTAAATAGA 948
          ||||| |  | |||| || |||||| ||||| ||||| |    |||  ||||| |||||||||
Db   1401 TGAATATG---CCTGGTCATATTATTAAAATGTAAAAATATATAGTTT-ATTAGTCTAAATAGA 1456

Qy    949 ATAAAAATTACCAGCTAGAACTATACGAGGAGAAATCTGAGGTGAGGTAAATCAGTAAGGCA 1008
          ||||| | ||||||||||||| | |   | ||| |  ||| ||| | |  |||| ||| ||
Db   1457 ATAAAACTACCAGCTAGAACTGTAGAAAACACAT--TGATATGAGTTTAATGTAATAATGC- 1513

Qy   1009 GTTGTTATTATACCTTCGTTAGTTACCTTAGCTACTTATTATATATATATTGTA 1068
              |||  ||||  ||  |||| ||||||| ||    |||||||   || ||||
Db   1514 -----ATTACACTTCCAAAACATTTTTCCAGTTACATAATTAAGTTATATCCTTTATA 1568

Qy   1069 ACACTTCTCAGTAATTATATAAACATCATTTAC-TTATGGTAATTATTAGCTTAGTTATAAG 1127
          | |||| |||||| |||||| || |||||||   |||| |||| |||| | ||| || |||
Db   1569 AAACTCCTCAGTAATCATATAAGCTTCATCTACTTTTTGAAAATTTTATCTTAATATATGTG 1628

Qy   1128 GTGGTTTCCCACCTGGAAAAGACACAAGTAAAAAACCTCTTGGGGAGAAGGGAACTTGTGTTA 1187
          ||||||| |||  |||||| ||||| ||||| |  || | |||||| | ||| || || | ||
Db   1629 GTGGTTTGTTGCCTGCCAAGAC--ACAAAATTCTCTTTTTGGAGAGGAGGAACTCATGTA 1684

Qy   1188 AACCCCACAAAAACAAAAGTCTAACTTT-------- 1214
          | ||| ||||||| ||||  | |||||||
Db   1685 AATACCACAAAAACAAAGCCTAACTTTGTTGGACCAAAAAATGTTTTAATATAATTATTTTTTAA 1744

Qy   1215 -------------TGGACCAAAATTTTTATGCCTTGTGTTTTGATGAATTATATTTTT 1256
                       |||||||||| ||||| ||| ||| ||||||| || ||||||||
Db   1745 TTGATGAATTAAAAAAGTATATATATAATAATTATGCAATATGTGTACAATGATAGTATGTAT 1804

Qy   1257 TAAAATCTTCCTCATTTAGACCAACTGTGCCACTGTGCCATTAAAGAGAAGTTTTTTCAGGGTATAGACAC 1316
          ||||| |||   ||| ||  || ||| || | ||  |  || ||| || || |||  || |||| | |||
Db   1805 ACATTGCAGAATGGACAAAATTTTTATACCTTGTCTTCTGATTATTTGCA-TTTT 1863

Qy   1317 ATTGAAGAACCAAAACTGCCCACGGCGGGCGTGTGGATAAAACTATTCCCAAAACTTGTCTTT 1376
          |||||||| |  |||| | | |  |||| ||| | | |||||| |||  ||||| ||||
Db   1864 AAAAATTTTCCTCATTTAGCACAACCAACTGTGCCACTGTGCCATTAAAGAGAAGGCAC 1923

Qy   1377 AATAAAAAGAACACATTAGAGCGGCGCAAAAAAGTAAGGTTAAGAGACATTTGGCAAAACTTAAGT 1436
          || ||||| || |||| |||| || | |||||| ||| ||||  |||||| ||| |||||| |||
Db   1924 ACTGGAGAGTCAAACTGTGCAAGGGGGTACTGTGGAAAAGACTATTCAAAAAAACTTGTTCCTT 1983

Qy   1437 ATATTTGTCTGACTCTGCCTGTTTTTTTTTTACAAGAATTGACAGTTTCCTA 1496
          ||| |||  ||||||| |||| |||||||| |||| ||||| |||||| |||
Db   1984 AATAAAGAAATACATTGACGGCCAAAAAAGTAGTTACACAGCATTCAAATGAAAGCTATATT 2043

Qy   1497 CAATATCT-----CCTCTGTTCTTTAACAGAAAGGGTGTGCAGGAGAAGATGGAGAG 1550
          |||||||     ||||| || ||||||||| ||| | |||||| |||||||||||||
Db   2086 TAATACCTATTGTCATTTTTTCTTTTCACAGAAAAAGTGTGGAGAGAAAGACGGAGAG 2145

Qy   2044 TGTCCTCGGCTG------- 2085
          ||  |  |||||
Db   2146 TAAACCAATTCCTAGACTCACTGCCAAGAGTTTCTTGGTGTAATGACACCGAGTCGGACTAA 2205

Qy   1611 CGGAAAGTTGAGACAACAACGGCCTTATTGTGTAGTGGAAGAGATTTGGAG 1657
          |||||||||||||||| | || |||| |||| |||||||||||||||||||
Db   2206 TAGAAAGTTGAGACTAAACTGGTTTGTTGCAGCCAAAGAGATTTTGGAG 2252
```

```
Query Match             36.2%;  Score 600.6;  DB 3;  Length 3230;
Best Local Similarity   67.8%;  Pred. No. 7.4e-109;
Matches 1212;  Conservative    0;  Mismatches 384;  Indels 191;  Gaps 19;

Qy      1 AGGCAAACACTGAACACATTTCAGAGCTATGAGAAATGGCTTCTGAATTTGAGTTTGGCTC 60
          |||||||||||||||||||||||||||||| || || || || || |||||||||| ||||
Db    527 AGGCAAACGGAGAAACGTTTCAGAGCCATGAGGACATGCTTCTCGCCATTTGAGTTTGCTAGCTC 586

Qy     61 TTGGGGGCTGCCCTATGTTTCTCGCCTTGCTGTAGAAAAATCCCATGAAATAGACTGGGTGGTGGCAG 120
          || | ||||| |||| ||| | | |||| |||| || ||||||||||| || |||| |||||| | ||
Db    587 TTGGGACTGCCTACGGTGTCATCCCATCCCACAGAAAATCCCACAGTAGCATTGGTGAAAG 646

Qy    121 AGACCTTGACACTGTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGGGTGGTGGTTA 180
          ||||||||||||| | |||||| |||| |||| ||| ||| || ||||| |||| | ||||
Db    647 AGACCTTGGCACTGCTTTCCTACTCATCGGACTCCTGGATAGGCCAATGAGGTAATTCT 706

Qy    181 TTTTGATTCCTTACAGTCTTTAAAATCCATGGGTAATTGGTGTGGCTGTGGCTAGTT------ 234
          ||||||||||| ||||| ||||||||||| || |||| ||||| | ||||| ||||||
Db    707 TTATGATTCCTTACAGTCCTGTAAAGTGCATAGGGTAATCATTTGTGATGGGTTCCTTACTAT 766

Qy    235 -TTTAAAGATCCATTATCAATGAAGTAAGTGTTAATAATAATAATGGGGTAACC 293
           |||||||||||| || || || ||||||| ||| || || ||||||| ||||
Db    767 ATAAAGAGATCTGTTATAAATAAAAATCTGAG-CACATTAGTACATGGTGATGAACT 825

Qy    294 ATGTTACTCAGAAGAATTATATTAAAAAGTTATTGAACCTTACAAATACATTAAAAAATGAATG 353
          |||||| ||||| | || || |||||||||| ||||||||||||||| |||| |||||||||
Db    826 ACATCACCAGCAAAACATTCTGTTAAAAGTTATGAATGCTGGTGTGCTTAGAAAATGATTG 885

Qy    354 TTGTTTCCTTTCTTTTCAGAACCTGATGAATTCCTTACTCCTGAAAAATAAAAAGTGTAAGTT 413
          ||||| ||||| ||||||||| ||| ||||||||| | ||||||||||||||||||||||| 
Db    886 -TATTTCCTTTCCTCCCAGACTCCTGACTCCTGTGTTCCTGTACATAAAAAAATGTAAGTT 944

Qy    414 AAATTATGATTGATTAAAATGATTACATGAAATCAG----TTTCATATTTTAAGCTATAAA 469
          ||||||| ||| || |||||   |  ||| | |||     ||||||||| ||||||||||
Db    886 ...
```

```
Db   945 AAATATGATTCAGTAAAAATGATGAATAAGTAAAATTCCGTGTTTTTAAGCTGTAAA 1004
             ||| ||||||||||| | ||||  | ||| |||  |||| |   |||||||||||
Qy   470 GTATCAGTTAACATGGGATGATTTAATTTTATCTATTTTGTTTTTATGTGTTGCGGATGT 529

Db  1005 TCATTAGTTATTCATTGGACTATATTTAATTTTCATATATGGGTGGCTGT 1064
             |||||  | ||||||| |||| |||| | ||||| |||||| ||||
Qy   530 AAAT-TATGTGTCTTATGAGAAATTAGGAATGGTGTTTAGGAATGGCTTACACAATATTAAGTA 588

Db  1065 GAAAGTGTCTGTACTTATATAAAATAATGAGGAATGACTTT------ 1109
             |||||| || |||||| |  | |||||| ||||| |||
Qy   589 GAATCCATTAAGCAAGTGGATCAGGCCCCTTTTTTTGATGTTGTCAGTTCTCCATCTCAAAG 648

Db  1110 GAAATCCTTTAAACAAGTGGATAGGCTCTTTGGGTGTTGTTAGTTGCTTCCCAAAG 1169
             ||||||||||||||| ||| ||| ||||| |||  ||| | |||||| | ||||||
Qy   649 AGCATCGTGTCAGGCAATCTTTCCCAAAAGAAATTCCATATTGGGTCAGAGATACTTCCTAG 708

Db  1170 AGCAATCGTGTCAGG-ATTCTTTCCAGAAGGAGTGGGCGTCCTAG 1228
             ||||| ||||||||| ||||||||||||| ||||| |||||| |||
Qy   709 GCTTCCATTCACCTCTGTCGTTGGGCTTTCCTCACCTCAAACGTTTTTCTGAAAGTACTTAGCA 768

Db  1229 TCTCCGTCGCAGTTCTGAC-----TCTTTCTCACTCTAAACGTGTTTTCGTATTTAGCA 1283
             ||  | ||||||| ||||       ||||| | | || |||| |||||||||||||
Qy   769 ACTTGGGGTTTATATATTTTAGAATTATATGGTCAGTAGACATGAAAATATACAGTGAAGTCCT 828

Db  1284 ACTCAGAAATATATATTTTTAGAACCATGACATTAAAATGTCAGTAGACATTAAAAATGCC- 1342
             ||| | ||||||||||||| |||| |  | ||| |||||||||||||||| ||| || |||
Qy   829 ATATTAATAGTCACTTCCACATATTTTAAACTCTAATGGAATCATATACAT 888

Db  1343 --CTATATTAATAAATTCTGCATACTTAAAATATTATGAACTATATATGGGTGTATGCAT 1400
             | | | || || ||  |||| | ||||| | | | |||| ||||| |||
Qy   889 CTGGAGTAGTGTCATGGTCATTATTATATTATAAATGTTAAAAGTGAATAATCAGTTCAAAATGA 948

Db  1401 TGAATAIG----CCTGGTCATTATTAAAATGTAAAATAIAGTTT-ATTAGTCTAAAAPAGA 1456
             ||||| ||     ||||| |||||||||| ||||||| |||  | |||||| ||||  ||
Qy   949 ATAAAATTACCAGCTAGAACTATACGGAGGAAAATTCTGAGGTGAGTAAAATCAGTAGGCA 1008

Db  1457 ATAAAAACTACCAGCTAGAACTGTAGAAACACAT--TGATATGAGTTTAAATGTATAATGC- 1513
             |||| |||| |||| || ||| ||  | | |||   |||||||||| | ||| |||| |
Qy  1009 GTTGTATTATACCTCGTAAGCAATTTATTTTCATTAATCATTCATTTATATCATTTGTA 1068

Db  1514 -----ATTACACTTCCAAAACANATTTTTTGGACCAAAAATTGTTTAATAATAATTTTTTAA 1568
               || | | || ||||| |||  ||||||||||| |||||| || ||| ||||||||
Qy  1069 ACACTTCTCAGTAATTATATAAACACATCATTTAC-TTATGGTAATTAGCTTATTAGTATAAG 1127

Db  1569 AAACTCCTCAGTAATCATAATAAGCTTCATCTACTTTTTTGAAAATTTTATCTTTAATAATGTG 1628
             || ||||||||| ||||  |  || | | | ||| ||| ||||||| |||| || | |||||
Qy  1128 GTGGGTTTCCCACCTGGAAAAGACAAGTAAAAAACCTCTTGGGAGAAGGAGAACTTGTGTA 1187

Db  1629 GTGGTTTTGTTGCCTAGAAA-----ACAAACAAAAAACTCTTGGGAGAAGGGGAACTCAIGTA 1684
             ||| |||| | |||||||        |||| |||||||| |||||||||| || |||| |||
Qy  1188 AACCCACACAAAAACAAAGTCTACTTTT----------TGGACCAAAATTTTATGCCTTGTGTTTGATGAATTATATTTTT 1256
             |||||||||||||||| ||||          ||||||||||||| |||||||||| |
Db  1745 TGATGAATTAAAAAGTATATATTTTATTGTACAATATGATGTTTTGAAGTATGTAT 1804

Qy  1215 -----------------------------------  1214
Db  1685 AATACACACAAAAAAAGCCTAACTTTGTGGACCAAAAATTGTTTAATAATAATTATTTTTAA 1744

Qy  1215 ----------------------------------- 1214

Qy  1377 AATAAAAGAAGACACATAGAGCGCCAAAAAGTAAGTTAAAGACATTTGGCAAAAAACTTAAGT 1436
             ||||| | |||| | || |||| ||   |||||| |||| | |||| ||||  |||||| |
Db  1924 ACTGGAGAGTCAAACTGTTGCAAGGGGGTTACTGTGGAAAGACTATTTCAAAAAACTTGTCCTT 1983

Db  1984 AATAAAGAAATACATTGACGGGCCAAAATTCAATGGAAGCTATATT 2043
```

```
Qy  1437 ATATTTGTCTCGACTCGCCCTGTTTTTTTTTTTTTTTTTTTACAAGAATTGACAGTTTCCTA 1496
             ||||                                         ||||||||||||||
Db  2044 TGTCCTGGCTG--------------------TGCCTATTTCTATGGAATTGACAGTTTCCTG 2085

Qy  1497 CAATATCT--------CCTTCGTTCTTTTAACAGAAAAAAGGTGTCGCAGGAGGAAGAGAGAG 1550
             ||||||         |||||||| ||||||||||||||||||||||||||||||||| |||||
Db  2086 TAATACCTATTGTCATTTTTTCTTTTTCACAGAAAAAGGTGGAAGAAAGTGTGGAAAGAGAG 2145

Qy  1551 TGACAAAGTTCCTAGACTACCTGCAAGTATATTCTTGGTGTATAAAACACGGAGTGGACAC 1610
             ||||||||||||||||||||||||||||||||||||||||||||||  ||||||||||||
Db  2146 TAAACCAATTCCTAGACTACCTGCAAGAGTTCTTCGGGTGTAAATGAACCACCGAGCTGGGTAA 2205

Qy  1611 CGGAAAGTTGAGAACAAAACCCGCCTTAITTGTTACTGTGGAAGGATTTTTGGGAG 1657
             |||||||||||||||| || |||| |||||||| ||||| || ||||||| |||||
Db  2206 TAGAAAGTTGAGACTAAAACTGGTTTTGTTGCACCCAAAAGAATTTTGGAG 2252
```

ID   ABX04379
AC   ABX04379;
DT   13-JAN-2003 (first entry)
DE   Human Interleukin 5 cDNA.
KW   Human; ss; antisense; gene; interleukin 5; IL-5; IL-5 receptor;
KW   antiasthmatic; immunosuppressant; eosinophilic syndrome; asthma.
OS   Homo sapiens.
PN   US2002128216-A1.
PD   12-SEP-2002.
PF   07-MAR-2001; 2001US-00800629.
PR   26-MAR-1999; 99US-00287799.
PR   17-MAR-2000; 2000WO-US007318.
PA   (DEAN/) DEAN N M.
PA   (KARR/) KARRAS J G.
PA   (MCKA/) MCKAY R.
PA   (MANO/) MANOHARAN M.
PI   Dean NM, Karras JG, McKay R, Manoharan M;
DR   WPI; 2003-039602/03.

PS   Example 20; Page 48-49; 77pp; English.

The invention relates to an antisense compound of 8-30 nucleobases in
length, which modulates interleukin (IL)-5 signal transduction. Also
include are a pharmaceutical composition comprising the antisense
oligonucleotide and a pharmaceutically acceptable carrier or diluent, and
a diagnostic kit for detecting the expression level of the membrane form
versus soluble form of IL-5 receptor a. The antisense compound is useful
for modulating IL-5 signal transduction, modulating expression of
mammalian IL-5 or modulating the expression of mammalian IL-5 receptor a,
in cells or tissues, for altering the ratio of the isoforms of mammalian
IL-5 receptor a in mammalian cells or tissues, treating a mammal
having a disease or condition associated with IL-5 signal transduction,
IL-5 expression or IL-5 receptor a expression, where the disease or
condition include eosinophilic syndrome or asthma. An antisense compound
which alters splicing of an RNA encoding IL-5 receptor a is also useful
for treating a mammal having a disease or condition. The present sequence

Novel antisense compound for treating disease/condition e.g. eosinophilic
syndrome or asthma associated with interleukin-5 or IL-5 receptor
expression or IL-5 signal transduction, modulates IL-5 signal
transduction.

ABX04379 standard; cDNA; 3230 BP.

```
CC  is a cDNA encoding Human IL5, a target of the antisense compounds of the
CC  invention
XX
SQ  Sequence 3230 BP; 1027 A; 545 C; 622 G; 1036 T; 0 U; 0 Other;

Query Match         36.2%;  Score 600.6;  DB 8;  Length 3230;
Best Local Similarity   67.8%;  Pred No. 7.4e-109;
Matches 1212;  Conservative    0;  Mismatches 384;  Indels 191;  Gaps 19;
```

```
Qy      1 AGGCAAACACTGAACATTTCAGAGCTATGAGAGAATGCTTCGTAGCTC   60
          ||||||||||||||||||||||||||||||||||||||||||||||||
Db    527 AGGCAAAACCGAGAACGTTTCAGAGCCATGAGGCTATGAGAGTTTCAGCTC   586

Qy     61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTGTAGAAAATCCCATGA...   120
Db    587 TTGGAGCTGCCTACGTGTATGGCCATCCCCACAGAAATCCCA...   646

Qy    121 AGACCTTGACACTGCTCTCTCCACTCATCATCGGA...   180
Db    647 AGACCTTGGGCACTGCTTTCTACTCATCGACTCTCGTGA...   706

Qy    181 TTTTGAATTCCTACAGTCTTTAAAAATGCATGGGTAAT...   234
Db    707 TTATGAATTCCTACAGTCTGTAAAGTGCATAGGTAATCA...   766

Qy    235 -TTTAAAGATCCATTATCAATAATAGAGTAATAGAGTGTTAATAAT...   293
Db    767 ATATAGAGATCTGTTATTTAAATAATAGATTCTGAG-CACATTAGT...   825

Qy    294 ATGTTACTCAGAAGAAATTATTTATTTTACTTACAATACATTAAAATGAATG   353
Db    826 ACATCACCAGCAAACATTCTGTTAAAAGTTATGAATGCTCGGTGTCG...   885

Qy    354 TTGTTTCCTTTCTTTTTCTTCAGAACCTGATGATTCCTACTCCTGAAAAT...   413
Db    886 -TATTTCCTTCTTCCTCCAGACTCTGAGGATTCCGTTCCTGTTACAT...   944

Qy    414 AAATTATGATTTGATAAAAATGATTACATGAATCAG----   469
Db    945 AAATTATGATTCAGTAGAAATGGCATGAAATAGAGTAAA...   1004

Qy    470 GTATCAGTTAACATTGGGATGGGAGATTTAATTTTATCTATT...   529
Db   1005 TCATTAGTTATCATTTGGAACTATTTAATTTTTGTTTTCTAT...   1064

Qy    530 AAAT-TATGTGTACTTATGAAAATGAATTAGGAAGTGGTGTTAGGAATGG...   588
Db   1065 GAAGTGTCGTACTTATAAAATATGAGGAATGACTTT-----   1109

Qy    589 GAATCCATTAAGCAAGTAGGGATCAGGCCCTTTTTTGAGTTGTCAGTTCT...   648
Db   1110 GAATCCTTTAAACAAGTGGGATTAGGCTCCTTTGGTCGTGTTGTTAGTTTTG   1169

Qy    649 AGCCCGTGTGTCAGGGCATTCTTCTTCCAAGAGAATTCCATATTGGGCT...   708
Db   1170 AGCATCGTGTCAGG-ATTCTTTCCAGGAAGGAAATACTTCCTAG   1228

Qy    709 GCTCCATTCACCTCTGTTGGCTTCCTCACCTCAAACGTTTTTCTGAAAGT...   768
Db   1229 TCTCCGTGCAGTTCTGAC-----TCTTTCTCACTCTAACGTGTTTCTCGA...   1283

Qy    769 ACTTGGGGGTTATATTTTTAGAATTATGGTCAGTAGACATGAAAAT...   828
Db   1284 ACTCAGAATTATATTTTTTGGAACCATGATCAGTGAGACACATTAAAAT...   1342

Qy    829 ATATTAAATAGTCACTTCCACACATATTTTTACTTCATAATGG...   888
Db   1343 --CTATATTAATTAAATTCTGCATACTTTAAATAATTATGGACTAT...   1400

Qy    889 CTGGGAGTAGTGTCATCGATCATTATTAAAAAGTGTTAAAAAATGTGAT...   948
Db   1401 TGAAATATG---CCTGGTCATTATTAAAAATGTAATAGTAGTTTT-ATT...   1456
```

```
Qy    949 ATAAAATTACCAGCTAGAGAACTATACGAGAGAAAATTCTGAGGTGAGG...   1008
Db   1457 ATAAAAACTACCAGCTAGAACTGTAGAAAACACAT--TGATATGAGGTTA...   1513

Qy   1009 GTTGTTATTATACCTCCTGTAAGCATTTATTTTCATTAGCTATTATACAT...   1068
Db   1514 -----AATTACACTTCCAAAACATTTTTTCCAGTTACATAATTAAGTAT...   1568

Qy   1069 ACACTTCTCAGTATTATTATTATTAAAACATCATTTAC-TAATGGTA...   1127
Db   1629 GTGGGTTTTGTTGCCTTAGAAA------ACAAACAAAAAAACTCTTTTG...   1684

Qy   1128 GTGGGTTTCCCACCTGGAAAGAAGACACAAGTAAAAAACTCTTGGGGAG...   1187
Db   1685 AATACCACAAAAACAAAAGCCTAACTTTGGGACCAAAAATTGTTTAAT...   1744

Qy   1188 AACCCCACAAAAACAAAAGTCTAACTTTT-------   1214
Db   1745 TTGATGAATTAAAAAGTATATATATATTATTGTGTACAATATGATG...   1804

Qy   1215 ---------   1214
Db   1805 ACATTGCAGAATGGCAAATGGACCAGAAATTTTTATACCCTTGTTCGT...   1863

Qy   1215 ----TGGACCAAAATTTTTATGGCTTGGTTTTGGTTGATGAATTAATATAT...   1256
Db   1864 AAAAATTTTTCCCTCATTGACCACCAACTGGCATTAAAGAAGTTTTCAG...   1923

Qy   1257 TAAAATCTTCCTCATTTAGCACCAACTGCATTAAAGAAGTAAAAATGTGCA...   1316
Db   1924 ACTGGGAGACTCAAACTGTGCAAGGGGGTACTGTGGGAAGACTATTCAAA...   1983

Qy   1317 ATTGAAGAAACCAAAACTGCCCACGGAGGAGGCGCGTGTGAATAAAACTT...   1376
Db   1984 AATAAAAGAAATACATTGACGGCCCAAAAAGTAAGTTACACACATTCAA...   2043

Qy   1377 AATAAAAAGGACACATAGAGAGCGCCCAAAAAGAGTAAGTTAAAGACGAG...   1436
Db   2044 TGTCCTGGGCTG---------   2085

Qy   1437 ATATTTGTCTGACTCTGCCCTGTTTTTTTTTTTTTTTTTACAAGAATTG...   1496
Db   2086 TAATACCTATTGTCATTTTCTTTTTCACAGAAAAAGTGTGAGAAGAACG...   2145

Qy   1497 CAAATATCT-------CCTCTGTTCTTTTAACAGAAAAAGGTGTGCAGG...   1550
Db   2146 TAAACCAATTCCTAGACTACCTGCCAAGAGTTCTTCGGTGTAATAACAC...   2205

Qy   1551 TGACAAAAGTTCCTAGAACTACCTGCCAAGTACTATTCTTGGTGTAATAA...   1610
Db   2206 TAGAAAGTTGAGACTAAAACTGGTTTTGTTGCAGCCAAAGAGATTTTGGAG   2252

Qy   1611 CGGAAAGTTGAGAACAAAACCGCGTCTATTGTTGAGTGAGTTGTGGGAAG...   1657
```

```
RESULT 14
ADN12146
ID   ADN12146 standard; DNA; 3230 BP.
XX
AC   ADN12146;
XX
DT   17-JUN-2004  (first entry)
XX
DE   Interleukin 5 beta IL5.
XX
KW   major histocompatibility class I; MHC-I; MHC-II; Cytostatic;
KW   EBV-associated cancer; Hodgkin's lymphoma; nasopharyngeal carcinoma;
KW   gastric carcinoma; Burkitt's lymphoma; T-cell lymphoma; B-cell lymphoma;
KW   parotid carcinoma; breast carcinoma; leiomyosarcoma; ds.
XX
OS   Homo sapiens.
```

```
XX
PN   WO200402703G-A2.
XX
PD   01-APR-2004.
XX
PF   19-SEP-2003; 2003WO-US029684.
XX
PR   19-SEP-2002; 2002US-0411990P.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Ambinder RF, Yang Y, Borrello IM, Levitsky HI;
XX
DR   WPI; 2004-295406/27.
XX
PT   New human cell line modified to comprise and express genes encoding
PT   immunomodulators and an antigen of Epstein-Barr virus (EBV), useful for
PT   inducing or stimulating an immune response in a human to EBV-associated
PT   cancer.
XX
PS   Claim 6; SEQ ID NO 39; 218pp; English.
XX
CC   The present invention relates to a human cell line, which lacks major
CC   histocompatibility class I (MHC-I) and MHC-II antigens and which has been
CC   modified to comprise and express a gene encoding an immunomodulator and a
CC   gene encoding an antigen of Epstein-Barr virus (EBV). The human cell
CC   line, compositions and methods are useful for inducing or stimulating an
CC   immune response in a human to an EBV-associated cancer, where the human
CC   has or is at risk for Hodgkin's lymphoma, nasopharyngeal carcinoma,
CC   gastric carcinoma, Burkitt's lymphoma, T-cell lymphoma, B-cell lymphoma,
CC   parotid carcinoma, breast carcinoma, and leiomyosarcoma. The present
CC   sequence represents a nucleotide sequence associated with the cell line
CC   of the invention.
XX
SQ   Sequence 3230 BP; 1027 A; 545 C; 622 G; 1036 T; 0 U; 0 Other;

Query Match             36.2%;  Score 600.6;  DB 12;  Length 3230;
Best Local Similarity   67.8%;  Pred. No. 7.4e-109;
Matches 1212;  Conservative   0;  Mismatches  384;  Indels  191;  Gaps  19;
```

```
Qy     1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCCTTCTGAATTTGAGTTTGCTAGCTC 60
           |||||||| ||  ||  |||||||| |||||||||||| ||||  ||||| ||||||||||
Db   527 AGGCAAACGCAGAAGCGTTTCAGAGCCATGAGAATGCTTCTGCATTTCTGAATTTGCTAGCTC 586

Qy    61 TTGGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCATGAATAGACTGGTGGCAG 120
           ||| | ||||||| ||| |||||    |  | ||||||||||| |||| |||||| ||
Db   587 TTGGAGCTGCCTACGTGTATGCCATCCCCACAGAAAATCCCACAGAAGTGCATTGGTGAAAG 646

Qy   121 AGACCTTGACACTGCTCCTCCACTCATCGAACTTGGGTGGCGATGGGGGTAATTTTCT 180
           |||||||| ||||||| | |||||||||||| | |  | |||| |||| |||||||||
Db   647 AGACCTTGGCACTGCTTTCTCACTCATCGAACCTCTGCTGATAGGCCATCGAGGGTAATTTTCT 706

Qy   181 TTTTTGATTCCTACAGTCTTTAAAATGCATGGGGTAATTGGGGTGTGGGTGGCTAGTT------ 234
           ||  ||||||||||||||  ||||  |||||  |||||   | ||  |||  ||| ||
Db   707 TTATGATTCCTACAGTCTGTAAAAGTGCATAAGGTAATCATTGTGATTGGTTCCTTTACTAT 766

Qy   235 -TTTAAAGATCCATTATCAATAATGAGTGTTAATAATATATAGGGTRACC 293
            || ||||||| |||| ||||| ||||  |||||  | ||||||| | ||
Db   767 ATATAGAGATCTGTTATAATAATATAAGATTCTGAG-CACATTAGTACATATATAGGGTGATACT 825

Qy   294 ATGTTACTTCAGAGAGATTATATTATTAATTAAAAGTTATGAACCTTACACAATAACATTAAAAATGAAATG 353
           | ||| || || |  |  || ||||||||   ||||||||||    | ||| |  || |||||||| ||||
Db   826 ACATCACCAGCAAACAATTCTGTTATAAAAGTTATGAAATCGCTGGGTGTGCTGTAAAAATGAATG 885

Qy   354 TTGTTTCCTTTCTTTTTTTTTCAGAACCTGATGATTCCTACTCCTGAAAATAAAAAATGTAAGTT 413
            |  | |||| || | | | ||||| |  | || | |||||   | |||||| ||||||||||||
Db   886 -TATTTCCTTCCTTCCTCCCAGAGAATTCCGTTCCTGTACATTAAAAATGTAAGTT 944

Qy   414 AAATTATCATTTGATAAAATGATTACATGAATCAG----TTTCATAATTTTAAGCTATAAA 469
           |||||||| ||| ||||||| ||| | || ||      |||| | |||||||||| | | |
Db   945 AAATTATGATTCAGTAAAAATGATGGCGATGAAATAAATTTCCTGTTTTTAAGCTGTGTAAA 1004

Qy   470 GTATCAGTTAACATTGGGATGATTAATTAATTATCTATTTGTTTTTATGTGTCGGATGT 529
            | ||||||| |||||||| | ||| ||||  ||||||  ||||||| |||| |||||
Db  1005 TCATTAGTTATCATTGGAACTATTTCATTTAATTTTCATATGGTGGCTGT 1064
```

```
Db  1005 TCATTAGTTATCATTGGAACTATTTCATTTAATTTTCATATGGTGGCTGT 1064
Qy   530 AAAT-TATGTGTTGTTATGAATATTAGGAATGGTGTGTTAGGAATGGGCTCTACAATATTAGTA 588

Db  1065 GAATGTCTGTACTTATAAATATGAGGAATGACTTT------TTATCAAGTA 1109
Qy   589 GAATCCATTAAGCACAGTGGGATCAGGCCCCTTTTTGATGTTGTCAGTTCTCCATCTCAAAG 648

Db  1110 GAATCCTTTAAACAAGTGGGATTAGGCCTCTTTGGTGATGTTGATGGTTCCTTCCCCAAAG 1169
Qy   649 AGGCTCGTGTCAGGCATTCTTTCCAAAAAGAATTCCATTATTGGGGTCAGAGATACTTCCTAG 708

Db  1170 AGCATCGGTGTCAGG-ATTCTTTCCCAGAGGATTCCACTGAGAGGTGAGAGGTGCGTGCTAG 1228
Qy   709 GCTCCCATTCACCTCTGTCGCGTTGGCTTTCCTCACCTCAACGTTTTCTGAAAGTACTACA 768

Db  1229 TCTCCCGTGCCAGTTCTGAC------TCTTTCTCACTCTAACGGTGTTTCTGAAAGGTATTAGCA 1283
Qy   769 ACTTGGGGGTTATATTTTTTAGAATTATGGTCAGTAGCATGAAAAATATATCAGTGAAGTCCT 828

Db  1284 ACTTCAGAATTATATTATTTTTTAGAACCATGATCAGCATTAAAAATATAACAAAATGCC- 1342
Qy   829 ATATTAATAGTTCACTTCCACATATTTTTAAATGATTTTAAACTCTTAATGGAATCATATACAT 888

Db  1343 --CTATATAATAATTCTGCATACTTAAAATAATATATGAGTTATATATGATGGTTATGGCAT 1400
Qy   889 CTGGAGTATGTCATGGTCATTATTATTAAAAAAATGTTAAAAAATGTGATAATCATTTGCTAAAATAGA 948

Db  1401 TGAATATG---CCTGGTCATTATTAAAAATGTAAAATATATAGTTT-ATTAGTCTAAATAGA 1456
Qy   949 ATAAAATTACCAGCTAGAACTAGTACGAGGAAAATTCTGAGGTGGAGGTAAATCAGTAAGGCA 1008

Db  1457 ATAAAAACTACCAGCTAGAAACTGTAGAAAACACAT--TGATATGAGTTTAAATGTATAAATGC- 1513
Qy  1009 GTTGTATTATACCTTCGTTAAGCATTCATTTATTTTCATTTATCATTTCATTTATATCATTGTA 1068

Db  1514 -----ATTACACTTCCAAAACATTTTTTTCCAGTTACATAATTAAGGTTACATATCCTTTATA 1568
Qy  1069 ACACTTCTCAGTAATTATTATATAAACATCATTTAC-TTATTGGTTAATTATAGCTTAGTGTAAG 1127

Db  1569 AAACTCCTCAGTAATCATTAACTTTTTGAAAATTTACTTAATATGTG 1628
Qy  1128 GTGGTTCCCACCTGGAAAAGACACAGTAAAAACCTCTTGGGAGAAGGGAACTTGTGTA 1187

Db  1629 GTGGTTTGTTGCTTAGAAA------ACAAACAAAAACTCTTTGGAGAAGGGAACTTCATGTA 1684
Qy  1188 AACCCCACAAAACAAAAGTCTAACTTTT------- 1214

Db  1685 AATACCACAAAAACAAGGCCTAACTTGTGTGGACCAAAAATTGTTTAAATAATTATTTTTTAA 1744
Qy  1215 ----------------------------------- 1214

Db  1745 TTCATGAATTAAAAAGTATATAATTATTGTACAATATGATGTTTTGAAGTATGTAT 1804
Qy  1215 -----------TGGACCAAATTTTATGCCTTGTTTGATGAATTATATTTTT 1256

Db  1805 ACATTGCAGAATGGACCAAATGGACCAAATTTTATGCCTTGTTTGATGAATTATATTTTT 1863
Qy  1257 TAAAATCTTCCTCATTTAGCACCAACTGTGCATTAAAGAAGTTTTCAGGGTATAGACAC 1316

Db  1864 AAAAATTTTCCTCATTTGCACTGAGACAAATCTTTCAGGGAATAGGCAC 1923
Qy  1317 ATTGAAGAACCAAAACTGCCCCACAGGGGAGGCGGCTGGGTAAAACTAATTCCAAAACTTGTCTTTT 1376

Db  1924 ACTGCGAGAGTCAAACTGTTCAAGGGGTACTGTGGAAAGAACTTCAAAAAAACTTGTCCTT 1983
Qy  1377 AATAAAAGAAACACATAGAGCGCGCCAAAAAGTAAGTTAAAGAAGACATTTGGGCAAAAAACTTAAGT 1436

Db  1984 AATAAAAGAAATACATTGACGGCCCAAAAAAGTAAGTTACACAACATTCAATGGAGCTATATT 2043
Qy  1437 ATATTTGTCTGACTCTGCCTGTTTTTTTTTTTTTTTTACAAGAATTGACAGTTTCCTA 1496
```

```
Db   2044  TGTCCTGGCTG-----------------TGCCTATTTCTATGGAATTGACAGTTTCCTG 2085
                 |||  ||                        ||  | |  |||||  ||  ||||||
Qy   1497  CAATATCT--------CCTTCTGTTCTTTTAAACAGAAAAGGGTGTGCACGAGAAAGATGGAGAG 1550

Db   2086  TAATACCTATTGTCATTTTTCTTTTTTCACAGAAAAAGTGTGGAGAAGAAGACCGAGAG 2145
           ||  |   | |  ||     | ||| || ||||||||||  || ||||||| ||||||||
Qy   1551  TGACAAAGTTCCTAGAATACTACCTGCAAGTATATTCTTGGTGTAATAAACACCGAGTGGACAC 1610

Db   2146  TAAACCAAATTCCTAGACTACCTGCAAGAGTTTCTTGGTGTAATGAACACCGAGTGGATAA 2205
           |||  ||| ||||||| |||||||||||| ||||||||||||||| ||||||||||||| ||
Qy   2146  TAAACCAAATTCCTAGACTACCTGCAAGAGTTTCTTGGTGTAATGAACACCGAGTGGATAA 2205

Qy   1611  CGGAAAGTTGAGACAACAAACCGGCTTATTGTAGTGGGAAGATTTTGGAG 1657
           ||| |||||||||| | ||||| ||  | || |||| |||||||||||||
Db   2206  TAGAAAGTTGAGACTAAACTCGGTTTCGTTGCAGCCAAAGATTTTGGAG 2252
```

RESULT 15
ADRI2056

ID   ADRI2056 standard; DNA; 3230 BP.
XX
AC   ADRI2056;
XX
DT   23-SEP-2004 (first entry)
XX
DE   Human interleukin-5 (IL-5) DNA.
XX
KW   Human; interleukin-5; IL-5; gene; ds; antisense oligonucleotide;
KW   IL-5 receptor a; phosphorothioate; 2'-O-methoxyethyl sugar moiety;
KW   5-methylcytosine; IL-5 signal transduction; apoptosis;
KW   eosinophilic syndrome; asthma; antiasthmatic; cytostatic.
XX
OS   Homo sapiens.
XX
PN   US200412137 6-A1.
XX
PD   24-JUN-2004.
XX
PF   06-OCT-2003; 2003US-00679532.
XX
PR   26-MAR-1999; 99US-00280799.
PR   17-MAR-2000; 2000WO-US007318.
PR   07-MAR-2001; 2001US-0080029.
XX
PT   New antisense compound modulating interleukin-5 signal transduction,
PT   useful in promoting apoptosis and in treating eosinophilic syndrome or
PT   asthma.
XX
PA   (DEAN/) DEAN N M.
PA   (KARR/) KARRAS J G.
PA   (MCKA/) MCKAY R.
PA   (MANO/) MANOHARAN M.
XX
PI   Dean NM, Karras JG, McKay R, Manoharan M;
XX
DR   WPI; 2004-479669/45.
DR   GENBANK; X12706.
XX
PS   Example 22; SEQ ID NO 78; 77pp; English.
XX

CC   The invention relates to an antisense compound that modulates interleukin
CC   -5 (IL-5) signal transduction. The antisense compound is an antisense
CC   oligonucleotide targeted to a nucleic acid molecule encoding a mammalian
CC   IL-5 or IL-5 receptor a, where the antisense compound modulates the
CC   expression of mammalian IL-5 or IL-5 receptor a. The antisense
CC   oligonucleotide comprises at least one modified internucleoside linkage,
CC   i.e. a phosphorothioate linkage, or a peptide nucleic acid, at least one
CC   modified sugar moiety, i.e. a 2'-O-methoxyethyl sugar moiety, and at
CC   least one modified nucleobase, i.e. 5-methylcytosine. Altering the ratio
CC   of the isoforms of mammalian IL-5 receptor a in mammalian cells or
CC   tissues comprises contacting the cells or tissues with an antisense
CC   compound so that the ratio of the IL-5 receptor a isoforms is
CC   altered. Treating a mammal having a disease or condition associated with
CC   IL-5 signal transduction or IL-5 receptor a expression, or a
CC   disease or condition characterised by a reduction in apoptosis comprises
CC   administering to the mammal a therapeutic or prophylactic amount of an
CC   antisense compound so that IL-5 signal transduction, IL-5 or IL-5
CC   receptor a expression, or IL-5 receptor a is modulated, the ratio of IL-5
CC   receptor a isoforms is altered, or expression of membrane IL-5 receptor a
CC   is modulated. The antisense compounds, methods and compositions are
CC   useful in promoting apoptosis and in treating eosinophilic syndrome and
CC   asthma. This sequence represents human IL-5 DNA of the invention.
XX
SQ   Sequence 3230 BP; 545 C; 622 G; 1036 T; 0 U; 0 Other;
XX

Query Match   36.2%; Score 600.6; DB 12; Length 3230;
Best Local Similarity   67.8%; Pred. No. 7.4e-109;
Matches 1212; Conservative   0; Mismatches 384; Indels 191; Gaps 19;

```
Qy     1  AGGCAAAACACTGAACATTTCAGGAGCTTATGAGAGTCTTCGAAATTGTTGAGTTTGCTAGCTC 60
          ||||||| | | |||| ||||||||||  |||| |||| ||| |||| ||||||||||||||||||
Db   527  AGGCAAACGCAGAACGTTTCAGGAGCCATGAGGAGGATGCTTCTGCATTTGAGTTTGCTAGCTC 586

Qy    61  TTGGGGCTGCCTTATGTTTTCTGCCTTGCTGTAGGAAAATCCCACAGAATAGACTGGTGGCAG 120
          |||||  |||||||  | |  | | ||  | ||| |  |||||||||  ||| | || ||||| |
Db   587  TTGGGAGCTGCCTACGTTGGTTATGCCATCCCCACAGAAATTCCCACAGAAGTGCATTGGTGAAAG 646

Qy   121  AGACCTTGACACTGCCTCCACTCATCGACTTGGCTGATAGGCGGATGGGGGTAATTTTCT 180
          ||||||||| |||||||| |  |||||||  || ||||| ||  ||| | |||| ||||||
Db   647  AGACCTTGGCACTGCCTCTTTCTACTCATCGACAATGGGTAATTGGTGGTGGCCAATGAGGTAAATTTTCT 706

Qy   181  TTTTGAATTCCTACAGTCTTTAAAATGCCATGGGTAATTGGTGGTGGCCAATGAGGTAAATTTTCT 234
          |||||||| |||||||| | ||||| ||| |||||| |  ||   |   |||| | | ||
Db   707  TTATGAATCCTACAGTCTGTAAAGTGCATAGGTAAACTCATTTGTGATGGTTCCTTTACTAT 766

Qy   235  -TTTAAAGATCCATTATCATTAAATGAAGTAATGAGTGTTAATAATATAATAATGGGTAACC 293
           |||||| | |   | | ||||| ||  || ||| | | || | |||||| ||| |||
Db   767  ATATAGAGATCTGTTATAAATAAAATAAGATCTGAG-CACATTAGTACATAGGGTGATAACT 825

Qy   294  ATGTTACTCAGAGAATTATATATTAAATGAAGTTATGGAAGCTTACAATACATTAAAAATGAATG 353
          |   |  |||  || ||  | || ||||| |||  | |||| | || |  | ||||   |
Db   826  ACATCACCAGCAAAACATTCGTTAAGTATGAATGCTGGTGTGCTGTAAAAATGATTG 885

Qy   354  TTGTTTCCTTTCTTTTCAGAACCTGATGATTCCTACTCCTGAAAATAAAAATGTAAGTT 413
          || || ||||| ||  | | | ||  | ||||  ||||| | | | ||||| |  |||
Db   886  -TATTTCCTTTCTCTCCAGACTCTGAGGATTCCTGTTCCTGTACATAGTGGGTAAGTT 944

Qy   414  AAATTATGATTGATAAAATGATTACATGAATCAG----TTTCATATTTTAAGCTATAAA 469
          || | ||||| ||  ||| |   |  |||   ||    ||| |  | |||| |
Db   945  AAATTATGATTCAGTGAAAATGATGAATAAGTAAATTTCCGTTTTAAGCTGTAAA 1004

Qy   470  GTATCAGTTAACATTGGGATGATTTAATTTAATCTATTTGTTTTTTATGTGTGGCGGATGT 529
          | || |||  || ||||| ||| | ||| |  | |||| |||  | | || | |  | ||
Db  1005  TCATTAGTTTATCATTGGAACTATTAAAATTTTGTTTTTTCATATATGGGTGTGT 1064

Qy   530  AAAT-TATGTGCTTATGAATTATTAGAAATGTGTTTAGGAAATGGCTCTACAATATTAAGTA 588
          |||| |||  |  || || ||||||  | ||  | |||  ||| | ||| |   |||||
Db  1065  GAAATGTCTGTACTTATAAAATAATGAGGAAATGACTTT---------TTATCAAGTA 1109

Qy   589  GAATCCATTAAGCAACAGTGGATCAGGCCCTTTTTTGATGGTTGTCAGTTCTCCAATCTCAAAG 648
          |||| | || | || ||| ||  |||| ||| | || || || |||||| || ||| ||||
Db  1110  GAATCCTTTAAAACAAGTGGATTAGGGCCTTTTTTTTGATGGTTGGTTAGTTGCTTCCAAAG 1169

Qy   649  AGCCTCGTGTCAGGCAATCTCTTCCAAAAGAATTCCATATTGGGTCAGAGATACTTCCTAG 708
          |||| | | |  || | |   |||| | || ||||||  | || | |||| |  | || |
Db  1170  AGCATCGGTGTGCAGG--ATTCTTTCCAGAAGGATTCCACACTGAGAGGTCGCCGTGCTAG 1228

Qy   709  GCTCCAATTCACCTCTGTTCGTTGGCTTTCTCCACGCGTTTTTTCTGAAAGTACTACGCA 768
          || |  ||||| || | || | ||||| ||||| | |  |  || |||||  | || ||
Db  1229  TCTCCGTGCAGTTCTGAC-----TCTTCTCACTCTAAGCGTGTTTCTGAAAGTATTAGCA 1283

Qy   769  ACTTGGGGTTATATTTTTAGAATTATGGTCAGTAGACAGTGAAAATATACAGTGAAGTCCT 828
          | ||| | |||| || || |||| |||| ||||| | | ||| |  |||  | ||| |||
Db  1284  ACTCAGAATTATATTTTTAGAACCATGATCAGTAGACAATGAAATATATACAGTAAAAAATGCC- 1342

Qy   829  ATATTAATAGTCACTTCCACATATTTTAAAATGAATTTTTTAACTCTAATGGAAATCATACAT 888
          | ||||| || | ||  ||| | |||||| |||| || | |||| | |||| |  | ||| |
Db  1343  --CTATATTAATAATTCTGCATACTTAAAATAATTAAATATGGAACATATTGATGGTGTTGTATGGCAT 1400
```

```
Qy   889  CTGGAGTATGTCAATGGTCATATATTAAAAATGTTAAAAATGTGATATATCATTAGTTCTAAATAGA  948
          |||||  ||      ||||||||  |||||||||||||||    |||  |||    | |||| ||||||||
Db  1401  TGAATATG---CCTGGTCATATTAAAAATGTTAAAAATATATAGTTTT-ATTAGTCTAAATAGA  1456

Qy   949  ATAAAATTACCAGCTAGAACTATACGGAGGAAATTCTGAGGTCAGGTAAATCAGTAAGGCA  1008
          ||||||  ||||||||||||||  ||| |||| |  ||  | |  ||||| || || ||
Db  1457  ATAAAACTACCAGCTAGAACTGTAGAAAACACAT--TGATATGAGTTAAGTGTATAATGC-  1513

Qy  1009  GTTGTATTATATACCTCGTAAGCATTTTATTTTCATTAAATCATTTATATCATTTGTA  1068
               |||| | |  ||||| |||||||||| || ||||  ||  ||| || | ||||
Db  1514  -----ATTACACTTCCAAAAACATTTTTTCCAGTTACATAATTAAGTAATATCCTTTATA  1568

Qy  1069  ACACTTCTCAGTAATTATATAAAACATCACATTTTAC-TTATGGTAATTATAGCTTAGTTATAAG  1127
          | |||||||||||||| |||||| | |||| | ||||  |||| ||||||| |  |||| ||||||
Db  1569  AAACTCCTCAGTAATCATATAAGCTTCATCTACTTTTGAAAAAATTTATCTTTAATATGTG  1628

Qy  1128  GTGGTTTCCCACCTGGAAAAGGACAAGTAAAAACCTCTTGGGAGAAGGGAACTTGGTGTA  1187
          |||||||  |||||||||  |||  ||||||||  |  ||||||| |||||||| ||||||
Db  1629  GTGGTTTGTTGCCCTAGAAA---ACAAACAAAAAACTCTTTGGGAGAAGGGGAACTCATGTA  1684

Qy  1188  AACCCCACACAAAACAAAGTCTAACTTTT------------------------  1214
          |||||| ||| ||||| ||||  ||||||
Db  1685  AATACCACACAAAAACAAAGCCCTAACTTTGTGGACCAAAAATTGTTTAATAATTATTTTTAA  1744

Qy  1215  ------------------------------------------------------------  1214
Db  1745  TTGATGAATTAAAAAGTATATATATATATTGTACAAATATGATGTTTTGAAGTATGTAT  1804

Qy  1215  ------------------------------------------------------------  1214
Db  1805  ACATTGCAGAATGGACAATGGACCAAAATTTTTATACCTTGTCTTGAATTATATTTTT  1863

Qy  1257  TAAAAATCTTCCTCATTTAGACCACTGTCATTAAAGAGTTTTTCAGGGTTATAGACAC  1316
          ||| | ||  |||||| ||| |||||||| || | ||| |||| ||| |||  ||||||
Db  1864  AAAAATTTTCCTCATTTAGCACCAACTGTGCACTGAAGAAATCTTTCAGGGAATAGGCAC  1923

Qy  1317  ATTGAAGAAGACCAAACTGCCCACACGGGAGAGGGCTGTCTGGGATAAACTATTCCAAAACTTGTCTTT  1376
          | ||| |||| ||||||||  || |||||  |||| ||||||| ||||| |||||  |||||| |||||||
Db  1924  ACTGGAGAGTCAAACTGTGCAAGGGGGGTACTGTCTGGAAAGACTATTCAAAAAACTTGTCCTT  1983

Qy  1377  AATAAAAGAACACATAGAGCGCCCAAAAGTAAGTAAGTTAAAGACATTTGGCAAAAACTTAAGT  1436
          ||||||||| || |  || ||  || |||  |||| |||||| |||||| ||| |||||||| |
Db  1984  AATAAAGAAATACATTGACGGGCCAAAAAGTAAGTTAGTTACACACATTCAATGGAAGCTATATT  2043

Qy  1437  ATATTTGTCTGACTCTGCCCTGTTTTTTTTTTTTTTTTACAAGAATTGACAGTTTCCTA  1496
          ||||| |||| |  |||| | ||||||||||||||  |||||| ||||||||||| |||
Db  2044  TGTCCTGGCTG----------TGCCTATTCTATGGAATTGACAGTTTCCTG  2085

Qy  1497  CAATATCT-----CCTCTGTTCTTTTAACAGAAAAAGGTGTGCAGGAGAAAAGATGGAGAG  1550
          |||||||      ||||||| ||||   ||| ||||| ||||| ||| ||||||||||||||
Db  2086  TAATACCTATTGTCATTTTCTTTTTCACAGAAAAAGTGTGGAGAAGAAAGACGGAGAG  2145

Qy  1551  TGACAAAGTTCCTAGACTACCTGCAGAGTATTTCTTGGTGTAATAAACACCGAGTGGACAC  1610
          | ||| ||||||||||||| | ||| ||| ||||||||||| ||| |||||| ||||||||
Db  2146  TAAACCAAATTCCTAGACTACCTGCGAGAGTTTCTTGGGTGTGTAATGACACACCGGAGTGGATAA  2205

Qy  1611  CGGAAAGTTGGAGAACAAACCCGGCTTATTGTAGTGGAAGAGATTTTGGAG  1657
          |||||| |||||||| || |||  | | || ||||||  || |||||||||
Db  2206  TAGAAAGTTGGAGACTAAAACTCGGTTTTGTTGCACCCAAAGAATTTTGGGAG  2252
```

THIS PAGE BLANK (USPTO)

GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

OM nucleic - nucleic search, using sw model

Run on: August 7, 2005, 09:34:25 ; Search time 1375.34 Seconds
(without alignments)
7814.559 Million cell updates/sec

Title: US-10-787-382-18
Perfect score: 1658
Sequence: 1 aggcaaacactgaacattc...........gtagtggaagatttggaga 1658
Scoring table: IDENTITY NUC
Gapop 10.0 , Gapext 1.0
Searched: 7297361 seqs, 324162794 residues
Total number of hits satisfying chosen parameters: 14594722

Minimum DB seq length: 0
Maximum DB seq length: 200000000
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :

Published Applications NA:*

			Database
1:		/cgn2_6/ptodata/2/pubpna/US07_PUBCOMB.seq:*
2:		/cgn2_6/ptodata/2/pubpna/US07_PUBCOMB.seq:*
3:		/cgn2_6/ptodata/2/pubpna/PCT_PUBCOMB.seq:*
4:		/cgn2_6/ptodata/2/pubpna/US06_NEW_PUB.seq:*
5:		/cgn2_6/ptodata/2/pubpna/US06_PUBCOMB.seq:*
6:		/cgn2_6/ptodata/2/pubpna/US07_NEW_PUB.seq:*
7:		/cgn2_6/ptodata/2/pubpna/PCTUS_PUBCOMB.seq:*
8:		/cgn2_6/ptodata/2/pubpna/US08_NEW_PUB.seq:*
9:		/cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*
10:		/cgn2_6/ptodata/2/pubpna/US09A_PUBCOMB.seq:*
11:		/cgn2_6/ptodata/2/pubpna/US09B_PUBCOMB.seq:*
12:		/cgn2_6/ptodata/2/pubpna/US09C_PUBCOMB.seq:*
13:		/cgn2_6/ptodata/2/pubpna/US09_NEW_PUB.seq:*
14:		/cgn2_6/ptodata/2/pubpna/US10A_PUBCOMB.seq:*
15:		/cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
16:		/cgn2_6/ptodata/2/pubpna/US10C_PUBCOMB.seq:*
17:		/cgn2_6/ptodata/2/pubpna/US10D_PUBCOMB.seq:*
18:		/cgn2_6/ptodata/2/pubpna/US10F_PUBCOMB.seq:*
19:		/cgn2_6/ptodata/2/pubpna/US10G_PUBCOMB.seq:*
20:		/cgn2_6/ptodata/2/pubpna/US10H_PUBCOMB.seq:*
21:		/cgn2_6/ptodata/2/pubpna/US10I_PUBCOMB.seq:*
22:		/cgn2_6/ptodata/2/pubpna/US10_NEW_PUB.seq:*
23:		/cgn2_6/ptodata/2/pubpna/US11_NEW_PUB.seq:*
24:		/cgn2_6/ptodata/2/pubpna/US11A_PUBCOMB.seq:*
25:		/cgn2_6/ptodata/2/pubpna/US60_NEW_PUB.seq:*
26:		/cgn2_6/ptodata/2/pubpna/US60_PUBCOMB.seq:*

SUMMARIES

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

Result No.	Score	% Query Match	Length	DB	ID	Description
1	1658	100.0	1658	9	US-09-755-633-18	Sequence 18, Appl
2	1658	100.0	1658	19	US-10-787-382-18	Sequence 18, Appl
3	1631.8	98.4	1658	9	US-09-755-633-19	Sequence 19, Appl
4	1631.8	98.4	1658	19	US-10-787-382-19	Sequence 19, Appl
5	634.6	38.3	3241	22	US-10-880-101A-91	Sequence 91, Appl
6	600.6	36.2	3230	9	US-09-800-629A-78	Sequence 78, Appl
7	600.6	36.2	3230	19	US-10-679-532-78	Sequence 78, Appl

	8	600.6	36.2	3230	22	US-10-880-101A-89	Sequence 89, Appl
	9	406	24.5	671	9	US-09-755-633-21	Sequence 21, Appl
c	10	406	24.5	671	19	US-10-787-382-21	Sequence 21, Appl
c	11	171.8	10.4	610	9	US-09-755-633-4	Sequence 4, Appl
c	12	171.8	10.4	610	9	US-09-755-633-6	Sequence 4, Appli
c	13	171.8	10.4	610	14	US-10-218-654-80	Sequence 80, Appl
c	14	171.8	10.4	610	14	US-10-218-654-82	Sequence 82, Appl
c	15	171.8	10.4	610	19	US-10-262-439-80	Sequence 80, Appli
c	16	171.8	10.4	610	19	US-10-262-439-82	Sequence 82, Appli
c	17	171.8	10.4	610	19	US-10-787-382-4	Sequence 4, Appli
c	18	171.8	10.4	610	19	US-10-787-382-6	Sequence 6, Appli
c	19	150.6	9.1	5397	15	US-10-311-455-1017	Sequence 1017, Ap
	20	145.8	8.8	402	9	US-09-755-633-7	Sequence 7, Appli
	21	145.8	8.8	402	9	US-09-755-633-8	Sequence 8, Appl
c	22	145.8	8.8	402	14	US-10-218-654-83	Sequence 83, Appl
c	23	145.8	8.8	402	14	US-10-218-654-84	Sequence 84, Appl
c	24	145.8	8.8	402	19	US-10-262-439-83	Sequence 83, Appl
c	25	145.8	8.8	402	19	US-10-262-439-84	Sequence 84, Appl
c	26	145.8	8.8	402	19	US-10-787-382-7	Sequence 7, Appli
c	27	145.8	8.8	402	19	US-10-787-382-8	Sequence 8, Appli
c	28	134.6	8.1	5397	15	US-10-311-455-1018	Sequence 1018, Ap
c	29	131.6	7.9	345	9	US-09-755-633-9	Sequence 9, Appli
c	30	131.6	7.9	345	9	US-09-755-633-11	Sequence 11, Appl
c	31	131.6	7.9	345	14	US-10-218-654-85	Sequence 85, Appl
c	32	131.6	7.9	345	14	US-10-218-654-87	Sequence 87, Appl
c	33	131.6	7.9	345	15	US-10-262-439-85	Sequence 85, Appl
c	34	131.6	7.9	345	19	US-10-262-439-87	Sequence 87, Appl
c	35	131.6	7.9	345	19	US-10-787-382-9	Sequence 9, Appl
c	36	131.6	7.9	345	19	US-10-787-382-11	Sequence 11, Appl
c	37	131.6	7.9	345	17	US-10-191-997-90	Sequence 90, Appl
	38	117.4	7.1	816	18	US-10-641-643-1236	Sequence 1236, Ap
	39	117.4	7.1	816	21	US-10-929-182-4	Sequence 4, Appl
c	40	117.4	6.9	816	22	US-10-880-101A-87	Sequence 87, Appl
c	41	114.4	7.1	459	22	US-10-880-101A-85	Sequence 85, Appl
	42	108	6.5	6727	9	US-09-800-629A-1	Sequence 1, Appli
	43	108	6.5	6727	19	US-10-679-532-1	Sequence 1, Appli
	44	96.2	5.8	858	16	US-10-295-074-8	Sequence 8, Appli
	45	96.2	5.8	858	16	US-10-295-074-10	Sequence 10, Appl

ALIGNMENTS

RESULT 1
US-09-755-633-18
Sequence 18, Application US/09755633
; Patent No. US20020127200A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shunin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/09/755,633
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: PatentIn Ver. 2.1
;
; SEQ ID NO 18
; LENGTH: 1658
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: intron
; LOCATION: (171)..(373)
; FEATURE:
; NAME/KEY: intron
; LOCATION: (407)..(1275)
; FEATURE:
; NAME/KEY: intron
; LOCATION: (1405)..(1522)

US-09-755-633-18

Query Match   100.0%;   Score 1658;   DB 9;   Length 1658;
Best Local Similarity 100.0%;   Pred. No. 0;
Matches 1658;   Conservative 0;   Mismatches 0;   Indels 0;   Gaps 0;

```
Qy      1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAAATTTGAGTTTGCTAGCTC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAAATTTGAGTTTGCTAGCTC 60

Qy     61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTCTGTGTAGAAAATCCCATGAATAGACTGGTGG 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTCTGTGTAGAAAATCCCATGAATAGACTGGTGG 120

Qy    121 AGACCTTGACACTGCTCTCCACTCATCGACACTTGGCGTGATAGGCCATGGGGTAATTTCT 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 AGACCTTGACACTGCTCTCCACTCATCGACACTTGGCGTGATAGGCCATGGGGTAATTTCT 180

Qy    181 TTTTGATTCCTACAGTCTTTAAAAATGCATGGGGTAATTGGGGTGGTGGCTAGTTTTTAAA 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 TTTTGATTCCTACAGTCTTTAAAAATGCATGGGGTAATTGGGGTGGTGGCTAGTTTTTAAA 240

Qy    241 GATCCATTATCAATAATGAAGTAATGAGTGTTAATAATATATATATATATACCATGTTAC 300
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 GATCCATTATCAATAATGAAGTAATGAGTGTTAATAATATATATATATATACCATGTTAC 300

Qy    301 TCAGAAAGAAATTATATATTAAAAGTTATATGAACCTTACAATACAATACATTAAAAATGA 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 TCAGAAAGAAATTATATATTAAAAGTTATATGAACCTTACAATACAATACATTAAAAATGA 360

Qy    361 CTTTCTTTTTCAGAACCTGATGATTCCTACTCCTGAAAAATAAAAATGTAAGTAAGTAAAT 420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    361 CTTTCTTTTTCAGAACCTGATGATTCCTACTCCTGAAAAATAAAAATGTAAGTAAGTAAAT 420

Qy    421 GATTTGATAAAATGATTACATGAATCAGTTTCATATTTTAGCTATAAGTATCAGTTTAA 480
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    421 GATTTGATAAAATGATTACATGAATCAGTTTCATATTTTAGCTATAAGTATCAGTTTAA 480

Qy    481 CATTGGGATGATTTAATTTATCTTATTTGTTTTGTTGTGCGGATGTAAATTTATGTGC 540
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    481 CATTGGGATGATTTAATTTATCTTATTTGTTTTGTTGTGCGGATGTAAATTTATGTGC 540

Qy    541 TTATGAATATTAGGAATGGTGTTAGGAATGGCTCTACAATATCAATATAAGTAGAATCCATTAAG 600
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    541 TTATGAATATTAGGAATGGTGTTAGGAATGGCTCTACAATATCAATATAAGTAGAATCCATTAAG 600

Qy    601 CAAGTGGATCAGGCCCTTTTTGATGTTGTCAGTTCTCCATCTCAAAGAGCCTCGTGTCA 660
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    601 CAAGTGGATCAGGCCCTTTTTGATGTTGTCAGTTCTCCATCTCAAAGAGCCTCGTGTCA 660

Qy    661 GGCATTCTTTCCAAAAAGAAATTCCATAATTCCTAGGCTCCATTCACC 720
          ||||||||||||||||||||||||||||||||||||||||||||||||
Db    661 GGCATTCTTTCCAAAAAGAAATTCCATAATTCCTAGGCTCCATTCACC 720

Qy    721 TCTGTCGGTTGGCTTTCCCTCACCTCAAGCGTTTTTCTGAAAGTACTAGCAACTTGGGGTTAT 780
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    721 TCTGTCGGTTGGCTTTCCCTCACCTCAAGCGTTTTTCTGAAAGTACTAGCAACTTGGGGTTAT 780

Qy    781 ATTTTTAGAATTATGGTAGACATGAACAATATACAGTGAAGTCCTATATTAATAGTC 840
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    781 ATTTTTAGAATTATGGTAGACATGAACAATATACAGTGAAGTCCTATATTAATAGTC 840

Qy    841 ACTTCCACATATTTAAATGATTTTTAACTCTAAATGAATCATATATCATCTCGGAGTATGTC 900
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    841 ACTTCCACATATTTAAATGATTTTTAACTCTAAATGAATCATATATCATCTCGGAGTATGTC 900

Qy    901 ATGGTCATTATTAAAATGTTAAAAAGTGAATCATTAGTCTAAATAGAATAAAATTACCA 960
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    901 ATGGTCATTATTAAAATGTTAAAAAGTGAATCATTAGTCTAAATAGAATAAAATTACCA 960

Qy    961 GCTAGGAACTATACGAGAGAAATTCTGAGGTGAGGGTAAATCAGTTAAGGCAGTTGTATTATAC 1020
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    961 GCTAGGAACTATACGAGAGAAATTCTGAGGTGAGGGTAAATCAGTTAAGGCAGTTGTATTATAC 1020

Qy   1021 CTCGTAAGCATTTATTTCTTTCATTAATCATTTCATTTATATATCATTTGTAACACTTCTCAGT 1080
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1021 CTCGTAAGCATTTATTTCTTTCATTAATCATTTCATTTATATATCATTTGTAACACTTCTCAGT 1080

Qy   1081 AATTATATAAAACATCATTTACTTATGGTAATTATATGCTTAGTATAAGGTGGTTTCCCACC 1140
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1081 AATTATATAAAACATCATTTACTTATGGTAATTATATGCTTAGTATAAGGTGGTTTCCCACC 1140

Qy   1141 TGGAAAAGACACAAGTAAAAAACCTCTTGGGGAGAAGGGAACTTGTGTTAAACCCCACAAAAC 1200
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1141 TGGAAAAGACACAAGTAAAAAACCTCTTGGGGAGAAGGGAACTTGTGTTAAACCCCACAAAAC 1200

Qy   1201 AAAGTCTAACTTTTTGGACCAAAATTTTATGCCTTGTTTGATGAATTATATTATTTTTTAAA 1260
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1201 AAAGTCTAACTTTTTGGACCAAAATTTTATGCCTTGTTTGATGAATTATATTATTTTTTAAA 1260

Qy   1261 ATCTTCCTCATTTAGCACCAACTGTCCATTAAAGAAGTTTTTCAGGGTATAGACACATTG 1320
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1261 ATCTTCCTCATTTAGCACCAACTGTCCATTAAAGAAGTTTTTCAGGGTATAGACACATTG 1320

Qy   1321 AAGAACCAAACTGCCCACGGGGGAGGGCTGTGGAATAAACTATTCCAAAACTTCCAAAACTTA 1380
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1321 AAGAACCAAACTGCCCACGGGGGAGGGCTGTGGAATAAACTATTCCAAAACTTCCAAAACTTA 1380

Qy   1381 AAAGAACATAGAGCGCCCAAAAAGTAAGTAAGTAAAGACATTTGGCATTATAGACACATTGTTAT 1440
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1381 AAAGAACATAGAGCGCCCAAAAAGTAAGTAAGTAAAGACATTTGGCATTATAGACACATTGTTAT 1440

Qy   1441 TTGTCTGACTCTGCCCGTCGTTTTTTTTTTTTTTTACAGAATTGACAGTTTCCTACAAT 1500
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1441 TTGTCTGACTCTGCCCGTCGTTTTTTTTTTTTTTTACAGAATTGACAGTTTCCTACAAT 1500

Qy   1501 ATCTCCTCCTGTTTCTTTTTAACAGAAAAGGTGTGCCAGGAGGAAAGAAGAATGGAGAGTT 1560
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1501 ATCTCCTCCTGTTTCTTTTTAACAGAAAAGGTGTGCCAGGAGGAAAGAAGAATGGAGAGTT 1560

Qy   1561 CCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGTTG 1620
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1561 CCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGTTG 1620

Qy   1621 AGAACAAAACCCGGCCTTATTGTGAGTGGGAAGATTTTGGGAGA 1658
          ||||||||||||||||||||||||||||||||||||||||||||
Db   1621 AGAACAAAACCCGGCCTTATTGTGAGTGGGAAGATTTTGGGAGA 1658
```

RESULT 2
US-10-787-382-18
Sequence 18, Application US/10787382
Publication No. US20040191868A1
GENERAL INFORMATION:
  APPLICANT: Yang, Shumin
  APPLICANT: McCall, Catherine A.
  APPLICANT: Weber, Eric R.
  TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
  TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
  FILE REFERENCE: IM-2-C1-C1
  CURRENT APPLICATION NUMBER: US/10/787,382
  CURRENT FILING DATE: 2004-02-24
  PRIOR APPLICATION NUMBER: US/09/755,633
  PRIOR FILING DATE: 2001-01-05
  PRIOR APPLICATION NUMBER: 09/322,409
  PRIOR FILING DATE: 1999-05-28
  PRIOR APPLICATION NUMBER: 60/087,306
  PRIOR FILING DATE: 1998-05-29
  NUMBER OF SEQ ID NOS: 21
  SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 18
  LENGTH: 1658
  TYPE: DNA
  ORGANISM: Canis familiaris
  FEATURE:
  NAME/KEY: intron

```
; FEATURE:
;   NAME/KEY: intron
; LOCATION: (171)..(373)
; FEATURE:
;   NAME/KEY: intron
; LOCATION: (407)..(1275)
; FEATURE:
;   NAME/KEY: intron
; LOCATION: (1405)..(1522)
US-10-787-382-18
; LOCATION: (1405)..(1522)
```

```
Query Match     100.0%; Score 1658; DB 19; Length 1658;
Best Local Similarity   100.0%; Pred. No. 0; Mismatches 0;
Matches 1658; Conservative 0; Indels 0; Gaps 0;
```

```
Qy    1 AGGCAAAACACTGAAACATTTCAGAGGCTATGAGAATGCTTCGAAATTTGAGTTTGCTAGCTC   60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1 AGGCAAAACACTGAAACATTTCAGAGGCTATGAGAATGCTTCGAAATTTGAGTTTGCTAGCTC   60

Qy   61 TTGGGGGCTGCCTAGTTGTTCTGCCTTTGCTGTGTAGAGAAAATCCATGAATAGACTGGGTGGCAG  120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 TTGGGGGCTGCCTAGTTGTTCTGCCTTTGCTGTGTAGAGAAAATCCATGAATAGACTGGGTGGCAG  120

Qy  121 AGACCCTTGACACTGCTCTCCCACTCATCTCGAACTTGGCTGATAGGCGATGGGGTAATTTCT  180
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121 AGACCCTTGACACTGCTCTCCCACTCATCTCGAACTTGGCTGATAGGCGATGGGGTAATTTCT  180

Qy  181 TTTTGATTCCTACAGTCTTTAAAAATGCATGGGTAATTGGGTGGTGGTGGCTAGTTTTTTAAA  240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181 TTTTGATTCCTACAGTCTTTAAAAATGCATGGGTAATTGGGTGGTGGTGGCTAGTTTTTTAAA  240

Qy  241 GATCCATTATCAATAATGAAGTAATGAGTGTTAATAATATATATATATATGGGTAACCATGTAC  300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241 GATCCATTATCAATAATGAAGTAATGAGTGTTAATAATATATATATATATGGGTAACCATGTAC  300

Qy  301 TCAGAAGAAATTATATTTAAAAGTTATGAACCTTACAATACATTAAAATAATGAATGTTGTTTC  360
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301 TCAGAAGAAATTATATTTAAAAGTTATGAACCTTACAATACATTAAAATAATGAATGTTGTTTC  360

Qy  361 CTTTCTTTTTCAGAACCTGATCGATTCCTACTCCTCGAAAAATAAAAGTTAAGTTAAAATTAT  420
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  361 CTTTCTTTTTCAGAACCTGATCGATTCCTACTCCTCGAAAAATAAAAGTTAAGTTAAAATTAT  420

Qy  421 GATTTGATAAAATGATTACATCAGTTTCATATTTTAAGCTATAAGTATCAGTTAA  480
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  421 GATTTGATAAAATGATTACATCAGTTTCATATTTTAAGCTATAAGTATCAGTTAA  480

Qy  481 CATTGGGATGATTTAATTTATCTATTTATTTTGTTTTTATGTGTCCGGATGTAAATTATCTGC  540
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  481 CATTGGGATGATTTAATTTATCTATTTATTTTGTTTTTATGTGTCCGGATGTAAATTATCTGC  540

Qy  541 TTATGAATATTAGGAATGGTGTTAGGAATGGCTCTCACAATAATTAAGTAGAATCCATTAAG  600
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  541 TTATGAATATTAGGAATGGTGTTAGGAATGGCTCTCACAATAATTAAGTAGAATCCATTAAG  600

Qy  601 CAAGTGGATCAGGCCCTTTTTTTGATGTTGTCAGTTCTTCCATCTCAAAGAGCCTCGTGTCA  660
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  601 CAAGTGGATCAGGCCCTTTTTTTGATGTTGTCAGTTCTTCCATCTCAAAGAGCCTCGTGTCA  660

Qy  661 GGCATTCTTTCCAAAAGAATTCCATATTGGGTCAGAGATACTTCCTAGGCTCCATTCACC  720
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  661 GGCATTCTTTCCAAAAGAATTCCATATTGGGTCAGAGATACTTCCTAGGCTCCATTCACC  720

Qy  721 TCTGTCTTCGGTTGGGCTTTCCTCACCTCAACGTTTTTTCTGAAAGTAGTACTAGGGGTTAT  780
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  721 TCTGTCTTCGGTTGGGCTTTCCTCACCTCAACGTTTTTTCTGAAAGTAGTACTAGGGGTTAT  780

Qy  781 ATTTTTTAGAATTATGGTCAGTAGACATGAAAAATATACAGTGAAGTCCTATATTAATAGTC  840
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  781 ATTTTTTAGAATTATGGTCAGTAGACATGAAAAATATACAGTGAAGTCCTATATTAATAGTC  840

Qy  841 ACTTCCACATATTTAAATGATTTTTAACTCTAAATGGAATCATATACATCTGGAGTATGTC  900
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  841 ACTTCCACATATTTAAATGATTTTTAACTCTAAATGGAATCATATACATCTGGAGTATGTC  900
```

```
Qy  901 ATGGTCATATTAAAAATGTTAAAAGTGATATCATTAGTGTCTAAATAGAATAGAAATTACCA  960
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  901 ATGGTCATATTAAAAATGTTAAAAGTGATATCATTAGTGTCTAAATAGAATAGAAATTACCA  960

Qy  961 GCTAGAACTATACGAGCGAAAATTCTGAGGTGAGGTAAATCATTAGTGTTGTATTATAC 1020
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  961 GCTAGAACTATACGAGCGAAAATTCTGAGGTGAGGTAAATCATTAGTGTTGTATTATAC 1020

Qy 1021 CTCGTAAGCATTTATTTTTCATTAATCATTTCATTTAATCATTTGTAACACTTCCACC 1080
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1021 CTCGTAAGCATTTATTTTTCATTAATCATTTCATTTAATCATTTGTAACACTTCCACC 1080

Qy 1081 AATTATATAAAACATCATTACTTATTATGGTAAATATTACGTATATATAGGTGGTTTCCCACC 1140
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1081 AATTATATAAAACATCATTACTTATTATGGTAAATATTACGTATATATAGGTGGTTTCCCACC 1140

Qy 1141 TCGAAAAGACACACAAGAGTAAAAAACCTCTTGGGAGGAAGGGGAACTTGTGTTAAAAC 1200
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1141 TCGAAAAGACACACAAGAGTAAAAAACCTCTTGGGAGGAAGGGGAACTTGTGTTAAAAC 1200

Qy 1201 AAAGTCTAAACTTTTTGGACCAAAATTTTTATGCCTTGTTGGTTGATGAATTAAATTTTTAAA 1260
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1201 AAAGTCTAAACTTTTTGGACCAAAATTTTTATGCCTTGTTGGTTGATGAATTAAATTTTTAAA 1260

Qy 1261 ATCTTCCTCATTTAGCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTG 1320
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1261 ATCTTCCTCATTTAGCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATTG 1320

Qy 1321 AAGAACCAAACTGCCCACGGGGGAGGGCTGTGGGATAAACTATTCCAAAACTTGTCTTTAATA 1380
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1321 AAGAACCAAACTGCCCACGGGGGAGGGCTGTGGGATAAACTATTCCAAAACTTGTCTTTAATA 1380

Qy 1381 AAAGAACACATAGAGCGGCCAAAAAGTAAGTAAAGACAATTGGCAAAAACTTAAGTATAT 1440
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1381 AAAGAACACATAGAGCGGCCAAAAAGTAAGTAAAGACAATTGGCAAAAACTTAAGTATAT 1440

Qy 1441 TTGTCTGACTCTCGCCCTGTTTTTTTTTTTTTTTTTTTACAAGATTGACAGTTCCTACAAT 1500
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1441 TTGTCTGACTCTCGCCCTGTTTTTTTTTTTTTTTTTTTACAAGATTGACAGTTCCTACAAT 1500

Qy 1501 ATCTCCCTGTTCTTTTCTTGGTGTCCAGGAGAAAAAGGTGTGGAGAGATGGGACAAAGTT 1560
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1501 ATCTCCCTGTTCTTTTCTTGGTGTCCAGGAGAAAAAGGTGTGGAGAGATGGGACAAAGTT 1560

Qy 1561 CCTAGACTACCTGCCAAGTATTTCTTGGGTGTAATAAACACCGGGACGCCGGAAAGTTG 1620
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 1561 CCTAGACTACCTGCCAAGTATTTCTTGGGTGTAATAAACACCGGGACGCCGGAAAGTTG 1620

Qy 1621 AGAACAAAACCCGCCTTATTGTACTGGGAAGAGATTTTTGGGAGA 1658
        ||||||||||||||||||||||||||||||||||||||||||||||

```
;   LENGTH: 1658
;   TYPE: DNA
;   ORGANISM: Canis familiaris
US-09-755-633-19

  Query Match             98.4%;  Score 1631.8;  DB 9;  Length 1658;
  Best Local Similarity   99.8%;  Pred. No. 0;
  Matches 1655;  Conservative    0;  Mismatches    2;  Indels    2;  Gaps    2;

Qy           1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
               |||||||||||||||||||||||||||||| |||||||||||||||||||||||||||||
Db        1658 AGGCAAACACTGAACATTTCAGAGCTATGACAATGCTTCTGAATTTGAGTTTGCTAGCTC 1599

Qy          61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAG 120
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        1598 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAG 1539

Qy         121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGTAATTTTCT 180
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        1538 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGTAATTTTCT 1479

Qy         181 TTTTGATTCCTACAGTCTTTAAAATGCATGGGTAATTGGTGGTGGTGGCTAGTTTTTAAA 240
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        1478 TTTTGATTCCTACAGTCTTTAAAATGCATGGGTAATTGGTGGTGGTGGCTAGTTTTTAAA 1419

Qy         241 GATCCATTATCAATAATGAAGTAATGAGTGTTAATAATATAT-AATGGGTAACCATGTTA 299
               |||||||||||||||||||||||||||||||||||||||||| |||||||||||||||||
Db        1418 GATCCATTATCAATAATGAAGTAATGAGTGTTAATAATATATAAATGGGTAACCATGTTA 1359

Qy         300 CTCAGAAGAATTATATTAAAAGTTATGAACCTTACAATACATTAAAAATGAATGTTGTTT 359
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        1358 CTCAGAAGAATTATATTAAAAGTTATGAACCTTACAATACATTAAAAATGAATGTTGTTT 1299

Qy         360 CCTTTCTTTTTCAGAACCTGATGATTCCTACTCCTGAAAATAAAAATGTAAGTTAAATTA 419
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        1298 CCTTTCTTTTTCAGAACCTGATGATTCCTACTCCTGAAAATAAAAATGTAAGTTAAATTA 1239

Qy         420 TGATTTGATAAAATGATTACATGAATCAGTTTCATATTTTAAGCTATAAAGTATCAGTTA 479
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        1238 TGATTTGATAAAATGATTACATGAATCAGTTTCATATTTTAAGCTATAAAGTATCAGTTA 1179

Qy         480 ACATTGGGATGATTTAATTTTATCTATTTTGTTTTTATGTGTGCGGATGTAAATTATGTG 539
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        1178 ACATTGGGATGATTTAATTTTATCTATTTTGTTTTTATGTGTGCGGATGTAAATTATGTG 1119

Qy         540 CTTATGAATATTAGGAATGGTGTTAGGAATGGCTCTACAATATTAAGTAGAATCCATTAA 599
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        1118 CTTATGAATATTAGGAATGGTGTTAGGAATGGCTCTACAATATTAAGTAGAATCCATTAA 1059

Qy         600 GCAAGTGGATCAGGCCCTTTTTTGATGTTGTCAGTTCTCCATCTCAAAGAGCCTCGTGTC 659
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        1058 GCAAGTGGATCAGGCCCTTTTTTGATGTTGTCAGTTCTCCATCTCAAAGAGCCTCGTGTC 999

Qy         660 AGGCATTCTTTCCAAAAGAATTCCATATTGGGTCAGAGATACTTCCTAGGCTCCATTCAC 719
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         998 AGGCATTCTTTCCAAAAGAATTCCATATTGGGTCAGAGATACTTCCTAGGCTCCATTCAC 939

Qy         720 CTCTGTCGTTGGCTTTCCTCACCTCAACGTTTTTCTGAAAGTACTAGCAACTTGGGGTTA 779
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         938 CTCTGTCGTTGGCTTTCCTCACCTCAACGTTTTTCTGAAAGTACTAGCAACTTGGGGTTA 879

Qy         780 TATTTTTAGAATTATGGTCAGTAGACATGAAAATATACAGTGAAGTCCTATATTAATAGT 839
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         878 TATTTTTAGAATTATGGTCAGTAGACATGAAAATATACAGTGAAGTCCTATATTAATAGT 819

Qy         840 CACTTCCACATATTTAAATGATTTTTAACTCTAATGGAATCATATACATCTGGAGTATGT 899
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         818 CACTTCCACATATTTAAATGATTTTTAACTCTAATGGAATCATATACATCTGGAGTATGT 759

Qy         900 CATGGTCATATTAAAATGTTAAAAATGTGATATCATTAGTCTAAATAGAATAAAATTACC 959
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         758 CATGGTCATATTAAAATGTTAAAAATGTGATATCATTAGTCTAAATAGAATAAAATTACC 699

Qy         960 AGCTAGAACTATACGAGGAAATTCTGAGGTGAGGTAAATCAGTAAGGCAGTTGTATTATA 1019
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         698 AGCTAGAACTATACGAGGAAATTCTGAGGTGAGGTAAATCAGTAAGGCAGTTGTATTATA 639

Qy        1020 CCTCGTAAGCATTTATTTTTCATTAATCATTTCATTTATATCATTTGTAACACTTCTCAG 1079
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         638 CCTCGTAAGCATTTATTTTTCATTAATCATTTCATTTATATCATTTGTAACACTTCTCAG 579

Qy        1080 TAATTATATAAACATCATTTACTTATGGTAATTATAGCTTAGTATAAGGTGGTTTCCCAC 1139
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         578 TAATTATATAAACATCATTTACTTATGGTAATTATAGCTTAGTATAAGGTGGTTTCCCAC 519

Qy        1140 CTGGAAAAGACACAAGTAAAAACCTCTTGGGAGAAGGGAACTTGTGTAAACCCCACAAAA 1199
               | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         518 CCGGAAAAGACACAAGTAAAAACCTCTTGGGAGAAGGGAACTTGTGTAAACCCCACAAAA 459

Qy        1200 CAAAGTCTAACTTTTGGACCAAATTTTTATGCCTTGTTTTGATGAATTATATTTTTTAA 1259
               ||||||||||| ||||||||||||||||||||||||||||||||||||||||||||||||
Db         458 CAAAGTCTAAC-TTTTGGACCAAATTTTTATGCCTTGTTTTGATGAATTATATTTTTTAA 400

Qy        1260 AATCTTCCTCATTTAGCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATT 1319
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         399 AATCTTCCTCATTTAGCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACACATT 340

Qy        1320 GAAGAACCAAACTGCCCACGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAAT 1379
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         339 GAAGAACCAAACTGCCCACGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTTAAT 280

Qy        1380 AAAAGAACACATAGAGCGCCAAAAAGTAAGTTAAAGACATTTGGCAAAAACTTAAGTATA 1439
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         279 AAAAGAACACATAGAGCGCCAAAAAGTAAGTTAAAGACATTTGGCAAAAACTTAAGTATA 220

Qy        1440 TTTGTCTGACTCTGCCTGTTTTTTTTTTTTTTTTTTACAAGAATTGACAGTTTCCTACAA 1499
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         219 TTTGTCTGACTCTGCCTGTTTTTTTTTTTTTTTTTTACAAGAATTGACAGTTTCCTACAA 160

Qy        1500 TATCTCCTCTGTTCTTTTAACAGAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGT 1559
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         159 TATCTCCTCTGTTCTTTTAACAGAAAAGGTGTGCAGGAGAAAGATGGAGAGTGACAAAGT 100

Qy        1560 TCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGTT 1619
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          99 TCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGTT 40

Qy        1620 GAGAACAAACCGGCTTATTGTAGTGGAAGATTTTGGAGA 1658
               |||||||||||||||||||||||||||||||||||||||
Db          39 GAGAACAAACCGGCTTATTGTAGTGGAAGATTTTGGAGA 1

RESULT 4
US-10-787-382-19/c
; Sequence 19, Application US/10787382
; Publication No. US20040191868A1
; GENERAL INFORMATION:
;  APPLICANT: Yang, Shumin
;  APPLICANT:  McCall, Catherine A.
;  APPLICANT:  Weber, Eric R.
;  TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;  TITLE OF INVENTION:  ACID MOLECULES, AND USES THEREOF
;  FILE REFERENCE: IM-2-C1-C1
;  CURRENT APPLICATION NUMBER: US/10/787,382
;  CURRENT FILING DATE:  2004-02-24
;  PRIOR APPLICATION NUMBER: US/09/755,633
;  PRIOR FILING DATE: 2001-01-05
;  PRIOR APPLICATION NUMBER: 09/322,409
;  PRIOR FILING DATE: 1999-05-28
;  PRIOR APPLICATION NUMBER: 60/087,306
;  PRIOR FILING DATE: 1998-05-29
;  NUMBER OF SEQ ID NOS: 21
;  SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 19
;   LENGTH: 1658
;   TYPE: DNA
```

; ORGANISM: Canis familiaris
US-10-787-382-19

Query Match   98.4%;   Score 1631.8;   DB 19;   Length 1658;
Best Local Similarity   99.8%;   Pred. No. 0;   Mismatches 2;
Matches 1655; Conservative   0; Mismatches   2;   Indels   2;   Gaps   2;

Qy   1 AGGCAAAACACTGAACATTTCAGAGCTTAGAGAATGCTTCTCGAATTTGAGTTTTGCTAGCTC   60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1658 AGGCAAAACACTGAACATTTCAGAGCTTAGAGAATGCTTCTCGAATTTGAGTTTTGCTAGCTC 1599

Qy   61 TTGGGGCTGCCTAGTTGTTCTGCCTTTGCTCGTAGAGAAAATCCATGAATAGACTGGGTGCAG 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1598 TTGGGGCTGCCTAGTTGTTCTGCCTTTGCTCGTAGAGAAAATCCATGAATAGACTGGGTGCAG 1539

Qy   121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCAGGTGAATTAATTTTTCT 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1538 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCAGGTGAATTAATTTTTCT 1479

Qy   181 TTTTGATTCCTACACGTCTCTTTAAAATGCATGGGTAATTGGTGGTGGTGGCTAGTGTTTTAA 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1478 TTTTGATTCCTACACGTCTCTTTAAAATGCATGGGTAATTGGTGGTGGTGGCTAGTGTTTTAA 1419

Qy   241 GATCCAATTATCAATAATGAAGTAATGAGTGTTAATAATATATAT-AATGGGTAACCATGTTA 299
           |||||||||||||||||||||||||||||||||||||||||||||| ||||||||||||||||
Db   1418 GATCCAATTATCAATAATGAAGTAATGAGTGTTAATAATATATATATAATGGGTAACCATGTTA 1359

Qy   300 CTCAGAAGAATTATATTAAAAGTTATGAAACCTTACAATACATTAAAATACCTAAAAATGTTA 359
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1358 CTCAGAAGAATTATATTAAAAGTTATGAAACCTTACAATACATTAAAATACCTAAAAATGTTT 1299

Qy   360 CCTTTCTTTTTTCAGAACCTGATGATTCCTACTCCTGAAAATAAAAATGTAAAAATGAATCA 419
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1298 CCTTTCTTTTTTCAGAACCTGATGATTCCTACTCCTGAAAATAAAAATGTAAAAATGAATTA 1239

Qy   420 TGATTTGATAAAATGATTACATGAATCAGTTCATATTTTAAGCTATAAAGTATATACAGTTA 479
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1238 TGATTTGATAAAATGATTACATGAATCAGTTCATATTTTAAGCTATAAAGTATATCAGTTA 1179

Qy   480 ACATTTGGGATGATTTAATTTATCTATTTTGTTTTTTTTTTATTTTTAAGTTAAAATATGTG 539
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1178 ACATTTGGGATGATTTAATTTATCTATTTTGTTTTTTATGTGTCGGATGTAAAATTATGTG 1119

Qy   540 CTTAATGAATAATTAGGAATGGTCAGTATGGCTCTACAATAATTAAGTAGAATCCATTAA 599
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1118 CTTAATGAATAATTAGGAATGGTGTTAGGAATGGCTCTACAATATTAAGTAGAATCCATTAA 1059

Qy   600 GCAAGTGGATCAGGCGCCCTTTTTGATGTTGTTGTTCAGTTCTCCATCTCAAAGAGGCCTCGTGTC 659
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1058 GCAAGTGGATCAGGCGCCCTTTTTGATGTTGTTCAGTTCTCCATCTCAAAGAGCCCTCGTGTC 999

Qy   660 AGGCATTCTTTCCAAAAGAATTCATATTATTGGGTCAGAGATACTTCCTAGGCTTCCATTCAC 719
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   998 AGGCATTCTTTCCAAAAGAATTCCATATTGGGTCAGAGATACTTCCTAGGCTTCCATTCAC 939

Qy   720 CTCTGTTCGTTGGCTTGGCTTTTCCTCACCTCAAACGTTTTTCTGAAAGTACTACTGGGGTTA 779
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   938 CTCTGTCGTTGGCTTGGCTTTTCCTCACCTCAAACGTTTTTCTGAAAGTACTAGCAACTGGGGTTA 879

Qy   780 TATTTTTAGAATTATGGTCAGTAGACATGAAAAATATACAGTGAAGTCCTATATTAATTAGT 839
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   878 TATTTTTAGAATTATGGTCAGTAGACATGAAAAATATACAGTGAAGTCCTATATTAATTAGT 819

Qy   840 CACTTCCACATATTTAAATCATTTTAAACTCTAAATGGAATCATCATATACATCTGGACTATGT 899
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   818 CACTTCCACATATTTAAATGATTTTTAACTCTAAATGGAATCATCATATACATCTGGAGTATGT 759

Qy   900 CATGGTCATATATAAAATGTTAAAAATGTTGATATCATTAGTCTAAATAGAATAAAATTACC 959
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   900 CATGTCATATTTAAAAAGTTAAAAAGTGATATCATTAGTCTAAATAGAATAAAATTACC 699

Qy   960 AGCTAGAACTATACGAGGAAATTCTGAGGTGAGGTAAATCAGTAAGCGACAGTTGTTATTATA 1019
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   960 AGCTAGAACTATACGAGGAAATTCTGAGGTGAGGTAAATCAGTAAGCGACAGTTGTTATTATA 1019
```

```
;  SOFTWARE: PatentIn version 3.3
; SEQ ID NO 91
;   LENGTH: 3241
;   TYPE: DNA
;   ORGANISM: Homo sapiens
US-10-880-101A-91

  Query Match             38.3%;  Score 634.6;  DB 22;  Length 3241;
  Best Local Similarity   68.6%;  Pred. No. 1.2e-120;
  Matches 1226;  Conservative    0;  Mismatches  374;  Indels  187;  Gaps   18;

Qy           1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
               |||||||| | |||| ||||||||| ||||| ||||||||| ||||||||||||||||||
Db         526 AGGCAAACGCAGAACGTTTCAGAGCCATGAGGATGCTTCTGCATTTGAGTTTGCTAGCTC 585

Qy          61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGCAG 120
               |||| |||||||| || | |||| |  |   ||||| |||||  | |  | |||||  ||
Db         586 TTGGAGCTGCCTACGTGTATGCCATCCCCACAGAAATTCCCACAAGTGCATTGGTGAAAG 645

Qy         121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGTAATTTTCT 180
               |||||||| ||||||| || ||||||||||||  |||||||| | ||| |||||||||||
Db         646 AGACCTTGGCACTGCTTTCTACTCATCGAACTCTGCTGATAGCCAATGAGGTAATTTTCT 705

Qy         181 TTTTGATTCCTACAGTCTTTAAAATGCATGGGTAATTGGTGGTGGTGGCTAGTT------ 234
               || ||||||||||||||| |||| ||||| ||||||   | ||| ||| |  ||
Db         706 TTATGATTCCTACAGTCTGTAAAGTGCATAGGTAATCATTTGTGATGGTTCCTTTACTAT 765

Qy         235 -TTTAAAGATCCATTATCAATAATGAAGTAATGAGTGTTAATAATATATAATGGGTAACC 293
                | || |||||  |||| |||||| |  |  ||||    | || || ||    | ||||
Db         766 ATATAGAGATCTGTTATAAATAATAAGATTCTGAG-CACATTAGTACATGGGTGATAACT 824

Qy         294 ATGTTACTCAGAAGAATTATATTAAAAGTTATGAACCTTACAATACATTAAAAATGAATG 353
               |  | ||    ||  ||| | ||||||||||||||   |    | |  ||||||||| ||
Db         825 ACATCACCAGCAAACATTCTGTTAAAAGTTATGAATGCTGGTGTGCTGTAAAAATGATTG 884

Qy         354 TTGTTTCCTTTCTTTTTCAGAACCTGATGATTCCTACTCCTGAAAATAAAAATGTAAGTT 413
                | ||||||||| | | ||||  |||| |||||||  ||||| | |||||||||||||||
Db         885 -TATTTCCTTTCCTCTCCAGACTCTGAGGATTCCTGTTCCTGTACATAAAAATGTAAGTT 943

Qy         414 AAATTATGATTTGATAAAATGATTACATGAATCAGT----TTCATATTTTAAGCTATAAA 469
               |||||||||||   |||||||||  ||||||| |||    ||| | ||||||||| ||||
Db         944 AAATTATGATTCAGTAAAATGATGGCATGAATAAGTAAATTTCCTGTTTTAAGCTGTAAA 1003

Qy         470 GTATCAGTTAACATTGGGATGATTTAATTTTATCTATTTTGTTTTTATGTGTGCGGATGT 529
                 || ||||| |||||| |  |||||||||| | ||||||||||| || || | || |||
Db        1004 TCATTAGTTATCATTGGAACTATTTAATTTTCTATATTTTGTTTTCATATGGGTGGCTGT 1063

Qy         530 AAAT-TATGTGCTTATGAATATTAGGAATGGTGTTAGGAATGGCTCTACAATATTAAGTA 588
                ||| | ||| ||||| ||||| |||||||   ||                ||| |||||
Db        1064 GAATGTCTGTACTTATAAATATGAGGAATGACTTT---------------TTATCAAGTA 1108

Qy         589 GAATCCATTAAGCAAGTGGATCAGGCCCTTTTTTGATGTTGTCAGTTCTCCATCTCAAAG 648
               |||||| |||| ||||||||| |||| ||||  ||||||||| |||| | | || |||||
Db        1109 GAATCCTTTAAACAAGTGGATTAGGCTCTTTGGTGATGTTGTTAGTT-TGCCTCCCAAAG 1167

Qy         649 AGCCTCGTGTCAGGCATTCTTTCCAAAAGAATTCCATATTGGGTCAGAGATACTTCCTAG 708
               ||| |||||||||| |||||||||| ||| |||||| | || || |||| | | | ||||
Db        1168 AGCATCGTGTCAGGGATTCTTTCCAGAAGGATTCCACACTGAGTGAGAGGTGCGTGCTAG 1227

Qy         709 GCTCCATTCACCTCTGTCGTTGGCTTTCCTCACCTCAACGTTTTTCTGAAAGTACTAGCA 768
                |||| | ||  |||| |       || |||||   ||||| |||||||||||| |||||
Db        1228 TCTCCGTGCAGTTCTGAC-----TCTTTCTCACTCTAACGTGTTTCTGAAAGTATTAGCA 1282

Qy         769 ACTTGGGGTTATATTTTTAGAATTATGGTCAGTAGACATGAAAATATACAGTGAAGTCCT 828
               |||  |  ||||||||||||||  ||| ||||||||||| |||||||| |   ||  ||
Db        1283 ACTCAGAATTATATTTTTAGAACCATGATCAGTAGACATTAAAATATATAACAAATGCC- 1341

Qy         829 ATATTAATAGTCACTTCCACATATTTAAATGATTTTTAACTCTAATGGAATCATATACAT 888
                   || || | | |||  |||| |||||| ||| | |         |
Db        1342 -CTATATTAATAATTTCTGCATACTTAAATAATTATGACTATATGATGGTGTTGTATGCA 1400

Qy         889 CTGGAGTATGTCATGGTCATATTAAAATGTTAAAAATGTGATATCATTAGTCTAAATAGA 948
                | || |||||| ||||||||||||||||| ||| || |  | |  ||||||||||||||
Db        1401 TTTGAATATGTCCTGGTCATATTAAAATGTAAAATATATAGTTTTATTAGTCTAAATAGA 1460

Qy         949 ATAAAATTACCAGCTAGAACTATACGAGGAAATTCTGAGGTGAGGTAAATCAGTAAGGCA 1008
               |||||| |||||||||||||| ||  |  | ||  |||  |||| | |||   |||
Db        1461 ATAAAACTACCAGCTAGAACTGTAGAAACACAT--TGATATGAGTTTAATGTATAA---- 1514

Qy        1009 GTTGTATTATACCTCGTAAGCATTTATTTTTCATTAATCATTTCATTTATATCATTTGTA 1068
                 || |||| || ||  || ||||| |||    |||   | || | ||||||| ||| ||
Db        1515 --TGCATTACACTTCCAAAACATTTTTTTCCAGTTACATAATTAAGTTATATCCTTTATA 1572

Qy        1069 ACACTTCTCAGTAATTATATAAACATCATTTAC-TTATGGTAATTATAGCTTAGTATAAG 1127
               | ||| ||||||||| |||||| | |||| ||| || ||  |||| || |||| |||  |
Db        1573 AAACTCCTCAGTAATCATATAAGCTTCATCTACTTTTTGAAAATTTTATCTTAATATGTG 1632

Qy        1128 GTGGTTTCCCACCTGGAAAAGACACAAGTAAAAACCTCTTGGGAGAAGGGAACTTGTGTA 1187
               |||||||    ||| ||||    ||||  ||||| ||||| |||||||||||||  ||||
Db        1633 GTGGTTTGTTGCCTAGAAA----ACAAACAAAAAACTCTTTGGAGAAGGGAACTCATGTA 1688

Qy        1188 AACCCCACAAAACAAAGTCTAACTTT---------------------------------- 1213
               ||  ||||||||||||| ||||||||
Db        1689 AATACCACAAAACAAAGCCTAACTTTGTGGACCAAAATTGTTTTAATAATTATTTTTTAA 1748

Qy        1214 ------------------------------------------------------------ 1213

Db        1749 TTGATGAATTAAAAAGTATATATATTTATTGTGTACAATATGATGTTTTGAAGTATGTAT 1808

Qy        1214 -----------------TTGGACCAAATTTTTATGCCTTGTTTTGATGAATTATATTTTT 1256
                                 |||||||||||||||| |||||| ||||| | ||  | ||||
Db        1809 ACATTGCAGAATGGACAATGGACCAAATTTTTATACCTTGTCTTGATTATTTGCA-TTTT 1867

Qy        1257 TAAAATCTTCCTCATTTAGCACCAACTGTGCATTAAAGAAGTTTTTCAGGGTATAGACAC 1316
                ||||| ||||||||||||||||||||||||| | ||||| | |||||||| |||| |||
Db        1868 AAAAATTTTCCTCATTTAGCACCAACTGTGCACTGAAGAAATCTTTCAGGGAATAGGCAC 1927

Qy        1317 ATTGAAGAACCAAACTGCCCACGGGGAGGCTGTGGATAAACTATTCCAAAACTTGTCTTT 1376
               | || |||  |||||||  || ||||   ||||||| | ||||||| |||||||||| ||
Db        1928 ACTGGAGAGTCAAACTGTGCAAGGGGGTACTGTGGAAAGACTATTCAAAAACTTGTCCTT 1987

Qy        1377 AATAAAAGAACACATAGAGCGCCAAAAAGTAAGTTAAAGACATTTGGCAAAAACTTAAGT 1436
               ||||||  || |||| ||  |||||||||||||||| | |||||      ||    |  |
Db        1988 AATAAAGAAATACATTGACGGCCAAAAAGTAAGTTACACACATT-----CAATGGAAGCT 2042

Qy        1437 ATATTTGTCTGACTCTGCCTGTTTTTTTTTTTTTTTTTTACAAGAATTGACAGTTTCCTA 1496
               ||||||||||| || ||||| ||| | |               ||||||||||||||||
Db        2043 ATATTTGTCTGGCTGTGCCTATTTCTAT--------------GGAATTGACAGTTTCCTG 2088

Qy        1497 CAATATCT------CCTCTGTTCTTTTAACAGAAAAGGTGTGCAGGAGAAAGATGGAGAG 1550
                |||| ||        | |  | |||| |||||||| ||||| || ||||||| ||||||
Db        2089 TAATACCTATTGTCATTTTTCTTTTTTCACAGAAAAAGTGTGGAGAAGAAAGACGGAGAG 2148

Qy        1551 TGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAACACCGAGTGGACAC 1610
               | |   | |||||||||||||||||||  |||||||||||||| ||||||||||||| |
Db        2149 TAAACCAATTCCTAGACTACCTGCAAGAGTTTCTTGGTGTAATGAACACCGAGTGGATAA 2208

Qy        1611 CGGAAAGTTGAGAACAAACCGGCTTATTGTAGTGGAAGATTTTGGAG 1657
                 |||||||||||  |||| || || ||| ||   ||||||||||||
Db        2209 TAGAAAGTTGAGACTAAACTGGTTTGTTGCAGCCAAAGATTTTGGAG 2255

RESULT 6
US-09-800-629A-78
; Sequence 78, Application US/09800629A
; Patent No. US20020128216A1
; GENERAL INFORMATION:
;  APPLICANT: Dean, Nicholas M.
;  APPLICANT:  Karras, James G
;  APPLICANT:  McKay, Robert
;  APPLICANT:  Manoharan, Muthiah
;  TITLE OF INVENTION: ANTISENSE MODULATION OF INTERLEUKIN-5 SIGNAL
;  TITLE OF INVENTION:  TRANSDUCTION
;  FILE REFERENCE: ISPH-0537
;  CURRENT APPLICATION NUMBER: US/09/800,629A
;  CURRENT FILING DATE:  2001-03-07
```

; PRIOR APPLICATION NUMBER: PCT/US00/07318
; PRIOR FILING DATE: 2000-03-17
; PRIOR APPLICATION NUMBER: 09/280,799
; PRIOR FILING DATE: 1999-03-26
; NUMBER OF SEQ ID NOS: 210
; SOFTWARE: PatentIn Ver. 2.0
;
; SEQ ID NO 78
; LENGTH: 3230
; TYPE: DNA
; ORGANISM: Homo sapiens
US-09-800-629A-78

Query Match   36.2%; Score 600.6; DB 9; Length 3230;
Best Local Similarity   67.8%; Pred. No 1.3e-113;
Matches 1212; Conservative   0; Mismatches 384; Indels 191; Gaps 19;

Qy   1 AGGCAAAACACTGAACATTTCAGAGCTAGAGAATCGCTTCTGAATTTGAGTTTGCTAGCTC 60
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   527 AGGCAAAACGCAGAAGCGTTTCAGAGCCATGAGAGGATCCTTCTGCATTTGAGTTTGCTAGCTC 586

Qy   61 TTGGGGGCTGCCTATGTGTTTCTGCCTTTGCTGTGTAGAAAATCCCATGAATAGACTGGTGGCAG 120
             |||| ||||| |||||||||||||||||||||||||||||||||||||||||||||||||||
Db   587 TTGGGAGCTGCCTACGTGTAATGCCATCCCCACAGAAAATCCCACAAGTGCATTGGTGAAAG 646

Qy   121 AGACCTTGACACTGTCTCTCCACACTCATCATCGACTTGGCCTAGGCCGATGGGGGTAAATTTTCT 180
             |||||||| ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   647 AGACCTTGGCCACTGCTTTCTACTCATCGAACTCGCTGATGAATGAGGTAATTTTCT 706

Qy   181 TTTTTGATTCCTACAGTCTCTTTAAAAATGCATGGGGGTAATTGGGTGGGTGGGTGGGCTAGTT----- 234
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   707 TTATGATTCCTACAGTCTGTAAAAGTGCATAGGTAATCATTGTGGATGGGTTCCTTTACTAT 766

Qy   235 -TTTAAAGATCCATTATCAATAAAATGAAGTAATGAGTGTTAATAATAATATAATAATATAATACT 293
              |||||||||||||||||||||||||||||||||||||||||||||| ||||||||||||
Db   767 ATATAGAGATCTGTTTATAATAAAATAAGATTCTGAG-CACATTAGTACATATATAATAACT 825

Qy   294 ATGTTACTCAGAAGAAGAATTATATATTAAAAAAGTTATGTGACCTTACACAATACATTAAAAATGAAATG 353
             ||||||||||||||||||||||||||||||||||||||||||||| ||||||||||||||
Db   826 ACATCACCCAGCAAACATTCTCGTTAAAAAGTTATGAATGCTGCGTGTGTGTAAAAATCATTG 885

Qy   354 TTGTTTCCTTTCCTTTTTCAGAACCTGATGACTTCCTACTCCTGAAAATAAAAATGTAAAGTT 413
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   886 -TATTTCCTTTCCCTCTCCAGACTCTGAGGGATTCCTTCCTGTTCCTGTACATAAAAATGTAAGTT 944

Qy   414 AAATTATGATTTGATAAAAAATGATTACATGAATCAG-----TTTCATATTTTTAAAGCTATAAA 469
             |||||||||||||||||||||||||||||||||||| |||||||||||||||||||
Db   945 AAAATTATGACTTCAGTAAAAATGGCATGAATAAGTAAAATTCCCTGTTTTTTAAAGCTGTAAA 1004

Qy   470 GTATCAGTTAACACATTGGGGATGGATCAGAGATTTTAATTTTAATTTTTCTATATTTTGTTTTTATTTGTGTCGGGATAGT 529
             |||||||||||||||||||||||||||||||||||||||||| |||||||||||||||||
Db   1005 TCATTGAGTTATTTATCATTGGAACTATTTTAATTTGTTTTTCAATATGTGGGTGGCTGT 1064

Qy   530 AAAT-TATGTCGTACTTATAGTTATGGTCAGTAGACATGAAAATATTACAGTGAGTCCT 588
             |||| |||||||||||||||||||||||||||||||||||| ||||||||||||||||
Db   1065 GAAGTGTTCTGTACTATTATAAAAATATGAGGAAATGACCTTT--------TTATCAAGTA 1109

Qy   589 GAATCCATTAAGCAAGTGGGATCAGGGCCCTTTTTGAGTTGTCAGTTCTCCATCTCAAAG 648
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1110 GAATCCTTTAAAACAAGTGGGATTAGGCTCTTTGGCTGATTGTTGCCTTCCCAAAG 1169

Qy   649 AGCCTCGTGTCAGGGCATTCTTTCTTCCCAAAAAGGAATTCCATATTGGGGTCAGAGATTACTTCCTAG 708
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1170 AGCATCGTGTCAGG-AATTCTTTTCCAGAAGGAGTCACACTGAGTGGAAATGAGGTCACTAG 1228

Qy   709 GCTCCAATCACCTCGTTGCGTTGGCTTCCTCACCTCAAGCGTTTTTTCTGAAAGTAGTA 768
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1229 TCTCCCGTGCAGTTCTGAC-----TCTTTCTCACTCTAACGGTGTTTCTGAAAGTATTAGCA 1283

Qy   769 ACTTGGGGTTATATTTTTAGAATTATGTCAGTAGACATGAAAATATACAGTGAGTCCT 828
             ||| |||||||||||||||||||||||||||||||||||||||||||||||
Db   1284 ACTCAGAATTATATTTTTTAGAACCATGATCAGTAGACATTAAAATATATAACAAATGCC- 1342

Qy   829 ATATTAATAGTCACTTCCACATATTCACAATATTTAAACTCTAATGGAATCATATACAT 888
             ||||||| ||||||||||||||||||||||||||||||||||||||||||||||
Db   1343 --CTATATTAATAATTCTCGATACTTACTTAAATTGGTAATTAATATATGACTATATGATGGGTGTTGTATGCAT 1400

Qy   889 CTGGAGTGTAGTTCATGGTCATATTCATATTAAAAATGTTAAAAAAGTGATATCATTAGTCCTAAATAGA 948
             |||||||||||||||||| ||||||||||||||||||||||||||||||||||||||||||
Db   1401 TGAATATG---CCTGGTCATATGTAATCAATTTAAAAATGTAAAAATATATAGTTCTAAAAATAGA 1456

Qy   949 ATAAAAATTACCAGCTAGAACTATATACGAGAGAAATTCTGAGGTGAGGTAAATCAGTAACGGCA 1008
             |||||||||||||||||||||||||||||||||||||||||||||||||| ||||||||
Db   1457 ATAAAAACTACCAGCCTAGAACTGTTAGAAACACAT--TGATATGAGTTTAATGTATAAATGC- 1513

Qy   1009 GTTGTATTTATACCTCGTTAAGCAATTTATTTTTCATTATATTATCATTATAATATCATTTGTA 1068
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1514 -----AATTACACTTCCAAAACATTTTTTTTTCCAGTTACATAATTAAGTTATATCCTTTATA 1568

Qy   1069 ACACTTCTCAGTTAATTATTATATAAAACATCATTTAC-TTAGTGGGTAATTATTAGCTTAGTTTAAATATGTG 1127
             || ||||||||||||||||||||||||||||||||| ||||||||||||||||||||
Db   1569 AAACCTCCTCACGTAATCATAATTCATCTACACTTTTTGAAAATTTTAATCTTAAATCTTAATATGTG 1628

Qy   1128 GTGGGTTCCCACCTGAAAAAGACACAAGTAAAAACCTTCTTGGGAGGAGGGGGAACTTGTGTA 1187
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1629 GTGGTTTTGTTGCCTTAGAAA-----ACAAACAAAAACTTCTTTGGAGGAGGGGGAACTCATGTA 1684

Qy   1188 AACCCCACAAAAACAAAAGTCTAAACTTTT---------- 1214
             ||||||||||||||||||||||||||||||
Db   1685 AATACCACAAAAACAAAAGCCTAACTTTGTGGACCAAAAAATTGTTTTAATAATATTTTTTTAA 1744

Qy   1215 ---------------- 1214

Db   1745 TTGATGAATTAAAAAGTATATATATTATTTTGTGTACAATAATGAGTTTTGAAGTAGTGTAT 1804

Qy   1215 ---------------- 1214

Db   1805 ACATTGCAGAGAATGGACAAATGACCAAAAAATTTTTTATTACCTTGTCTTTGATGAATTATTTGCA-TTTT 1863

Qy   1215 -TTTAAAGATCCATTATCAATAAAATGAAGTAATGAGTGTTAATAATAATATAATAATAATACC 1256
              |||||||||||| ||||||||||||||||||||||||||||
Db   1864 AAAAATCTTCCTCATTTTAGCACCAACTGTCATTAAAGAAGTTTTCAGGGTATAGACAC 1923

Qy   1257 TAAAATCTTCCTCATTTTAGCACCAACTGTGCATTAAAGAAGTTTTCAGGGTATAGACAC 1316
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1924 ACTGGAGAGTCAAACTCTGCAAGGGGGTACTGTGGAAAGACTATTCAAAAACTTTGTCCTT 1983

Qy   1317 ATTGAGAGAACCAAAACTGCCCACACGGGGAGGCGCTGTGAAAATCTTCCAAAACTTGTCTTT 1376
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1984 AATAAGAAAATACATTGACGGCGCCAAAAAGTAAGTTACACACATTCAATGGAGCTATATT 2043

Qy   1377 AATAAAAAGAACACATAGGAGCGCGCCAAAAAGTAAGTTAAAGACATTTGGCCAAAAACTTAAGT 1436
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2044 TGTCCTGGCTG----------------TGCCTTATTCTCTATGGAATTGACAGTTTCCTG 2085

Qy   1437 ATATTTGTCTGACTCTCGCCTGTTTTTTTTTTTTTTTTTTTACAAGAATTGACAGTTTCCTA 1496
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2086 TAATACCTATTGTCATTTTTCTTTTTTCACAGAAAAAGTGTGGAGAAGAGACGGAGAG 2145

Qy   1497 CAATATCT-----CCTCTGTTCTTTTTAACGAAAAAGGTGTTCAGGAGAGAGAAGAGAGAG 1550
             ||||||| ||||||||| ||||||||||||||||||||||||||||||||||
Db   2146 TAAAACAATTCCTAGACTACCTGCAAGAGTTTCTTGGTGTAATGAAGAACACCGAGTGGGATAA 2205

Qy   1551 TGACAAAGTTCCTAGACTACCTGCAAGTATTTCCTTGGTGTGAATAAACACCGGAGTGGGACAC 1610
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2206 TAGAAAGTTGAGACTAAAACTGGTTTGTTGTTGCAGCCAAAAGATTTTGGAG 2252

Qy   1611 CGGAAAGTTGAGAACAAAACCGGCCTTATTGTTGTAGTGGGAGAGATTTTGGAG 1657

TITLE OF INVENTION: ANTISENSE MODULATION OF INTERLEUKIN-5 SIGNAL
TITLE OF INVENTION: TRANSDUCTION
FILE REFERENCE: ISPH-0537
CURRENT APPLICATION NUMBER: US/10/679,532
CURRENT FILING DATE: 2003-10-06
PRIOR APPLICATION NUMBER: US/09/800,629A
PRIOR FILING DATE: 2001-03-07
PRIOR APPLICATION NUMBER: PCT/US00/07318
PRIOR FILING DATE: 2000-03-17
PRIOR APPLICATION NUMBER: 09/280,799
PRIOR FILING DATE: 1999-03-26
NUMBER OF SEQ ID NOS: 210
SOFTWARE: Patentin Ver. 2.0

SEQ ID NO 78
LENGTH: 3230
TYPE: DNA
ORGANISM: Homo sapiens

US-10-679-532-78

Query Match 36.2%;   Score 600.6; DB 19;   Length 3230;
Best Local Similarity 67.8%;   Pred. No. 1.3e-113;
Matches 1212; Conservative 0; Mismatches 384; Indels 191; Gaps 19;

```
Qy      1 AGGCAAAACACTGAACATTCAGAGACTATGAGAATGCTTCTTCGGAAATTTGAGTTTGCTAGCTC 60
            ||||||||| || ||| ||||||||| |||||| |||||||||  ||| | || ||||||||||
Db    527 AGGCAAAACGACGAACGTTTCAGAGACCATGAGGATGCTTCTCGCATTTGCATTTGCTAGCTC 586

Qy     61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTCGTGTAGAAAATCCCATGAAATAGACTGGTGGGCAG 120
            |||| ||||||||| ||  || ||  |||||| ||||  ||||| || || |||||||||  |||
Db    587 TTGGAGCTGCCTACGTGTATGCCATCCCCACAGAAATTCCCACAAAGTGCAATTGGTGAAAG 646

Qy    121 AGACCTTGACACTGCTCCTCACTCATCGAAATCGAACTTGGCTGACTAGGCCGGTAACGTAATCTTTTCT 180
            ||||||||  |||||| || | ||| | || || |||||||    |||| ||  ||||| ||| |||||
Db    647 AGACCTTGGGCACTGCTTCTTCTACTCTGTTCCTGATAGCCAATGAGGTAATTTTCT 706

Qy    181 TTTTTGATTCCTACAGTCTTTAAAAATGCATAGGGTAAATTGGTGTGGGTTGGTGGCTTAGTT------ 234
            |||| ||||||||||||| ||||| | |||||| ||| || |||| | || ||  ||| | ||
Db    707 TTATGATTCCTACAGTGCTGTAAAGTCGCATAGGTAATCATTGTGTGATTGGTTCCTTTTACTTAT 766

Qy    235 -TTTAAAGATCCATTATATCAATAATGAAGTAGTAGTGTTAATAATAATAATCATTTGTGTAGGTTCGTAACC 293
             |   ||| || | | || |||| |  | || |||  ||||||| | | | ||| ||||||   ||  |  ||
Db    767 ATATAGAGATCTGTTGTAATAAATAATAAGAATCTGAG-CACATTAGTACATGACGGTGATAACT 825

Qy    294 ATGTTACTCAGAAGAATTATATTAAAAGTATATAAATAATAAGAATGAATG 353
            ||| ||| ||| | ||| | |  | |||  ||| |||| |  || |||||||
Db    826 ACATCACCAGCAAAACATTCTGTTAAAAGTTATGAATGCTGGTTAAAATGATTG 885

Qy    354 TTGTTTCCTTTCTTTTTCAGAAACCTGATGATTCTTCTACTCTGAAAATAAAAATGTAAGTT 413
            |||||  |||||    || | ||| ||  || || ||| | |    | ||||| |||||| ||
Db    886 -TATTTCCTTTCCTCTCCGTTCCTGTTCCGTTCTTGTACATAAAAATGTAAGGTAATGTAA 944

Qy    414 AAAATTATGATTTGATAAAAATGATTACACATGAAGTCAG-----TTTCATATATTTTTCTGTTTTTTATGTGTTA 469
            |||| | | |||| || || |||| |||| | |||| |||     ||| |||||  || | |  |||| ||  |||
Db    945 AAAATTATGAATTCAGTGAAAAATGGCATGAATGAATCAGAAAATAAAATAAGAGTT-ATTAGTTCTAAAATAGA 1004

Qy    470 GTATCAGTTAACATTGGGATCATTTAATTTTATCTATATTTTTGTTTTATGTGTCGCGATGT 529
            || || || ||||| || || ||| ||| | | || |||||| |||| | |||  | | ||
Db   1005 TCATTAGTTATCATTGGAACTATTTAATTTTTGTTTTTCTATAATGGGTGGCTGT 1064

Qy    530 AAAAT-TATGTGTACTTATAAATATGAGGAATGACTTT------- 588
            ||   | ||| || || | || ||||| |||| |||||
Db   1065 GAATGTCTGTACTTATAAATAGGGAATGGCTCTACAATATCCATTATATTAAGTA 1109

Qy    589 GAATCCATTAAGCACAAGTGGATCAGGCGCCCTTTTTTGAGTTGTTGTCAGTTCTCCATCTTCAAAG 648
            |||||||||| | | |||  ||| |  |   ||  | |||| ||| || | ||  || | || ||||
Db   1110 GAATCCTTTAAACAAGTGGAATTAGGGCTTCTTGGTGAATGTTTTGCCTTCCCAAAG 1169

Qy    649 AGCCTCGTGTCAGGCATTCCTTTTCCAAAAGAATTCCATATTAAAAACTCCCTAG 708
            ||||| ||||  |   | | |||| || || ||| |||| |||| |||||||||||
Db   1170 AGCATCGTGTCAGG-ATTCTTTTCCAGAAGGAATTCCACACTGAGTGAGGTGCCGTCTAG 1228

Qy    709 GCTCCATTCACCTCTGTGTGGCTTTCTCACCCGTTTCTCAAACGTTTTTCTGAAAGTACTAGCA 768
            ||| ||||| ||| || | |||  || | | ||| | |||  ||  | ||| || |||| |||
Db   1229 TCTCCGTGCAGTTCTGAC------TCTTTCTCACTCTAACGTGTTTCTGAAAGTAGTTAGCA 1283

Qy    769 ... 828
Db   1284 ACTCAGAATTATATTTTTAGAACCATGAACATGATCAGTAGAGACATTAAAAATATAAACATGCC- 1342

Qy    829 ATATTAAATAGTCACTTCCACATATTAAGTAAATGATTTTTAACTCTAATTGAATCATAATGA 888
Db   1343 --CTATATTAATAATTCTGCATACTTAAATAATTAGATATATGATGGGTGTGTATGCAT 1400

Qy    889 CTGGAGTATGTCATGGTCATTATTAAAATGTTAAAATGCTAAAATAGA 948
Db   1401 TGAATATG---CCTGGTCATATTAAAAGTAAAAATATATAGTTT-ATTAGTCTAAAATAGA 1456

Qy    949 ATAAAAATTACCAGCAATACTAACGTAATACGAGGAAAATTCTGAGGTGAGGTAAATCAGTAAGGCA 1008
Db   1457 ATAAAAACTACCAGCTAGAACTGTAGAAAACACAT--TGATAGAGTTTAATGTATAATGC- 1513

Qy   1009 GTTGTATTATACCTCGTAACGCATTTATTATTTTCATTAAATCATTTCATTTATATCATTGTA 1068
Db   1514 -----ATTAACATTCCAAAACATTTTTTCCAGTGTACATAATTAAGTATATATCCTTTATA 1568

Qy   1069 ACACTTCTCAGTATATATAAAAACATCATTTAC-TTATGGTAATTATAGCTTAGTTATGTG 1127
Db   1569 AAACTCCTCAGTAATCATATAAGCTTCATCTAACTACTTTTTGAAAAATTTTATCTTAATATGTG 1628

Qy   1128 GTGGGTTTCCCACCTGGAAAAGACACAAGTAAAAAACCTCTGGGAGGAGAAGGGAACTCTGTTGTA 1187
Db   1629 GTGGGTTGTTGCCTAGAAAA----ACAAACAAAATGTCTTTGGGAGAAGGGAACTCATGGTA 1684

Qy   1188 AACCCCACAAAAACAAAAGTCTAACTTTT----------- 1214
Db   1685 AATACCACAAAAACAAAGCCTAACTTTGTGACCAAATTGTTTAATAATTATTTTTAA 1744

Qy   1215 --------------------- 1215
Db   1745 TTGATGAATTAAAAAGTATATATATATTATTGTGTACAATATGATGTTTGAAGTATGTAT 1804

Qy   1215 --------- 1215
Db   1805 ACATTGCAGAATGGACAATGGACCAAATTTTTATACTTGTCTTGATTATTTGCA-TTTT 1863

Qy   1215 --------- 1215
Db   1864 AAAAATTTCTCCTCATTTAGCACCAACTGTGGCATTAAAAGAGTTTTGAGGCCAC 1923

Qy   1215 --------- 1215
Db   1924 ACTGGAGGTCAAAACTGTGCAAAGGGGTACTGTGGGAAAGACTATTCAAAAAACTTGTCCTT 1983

Qy   1215 --------- 1215
Db   1984 AATAAAAGAAAATACATTGACGGCCAAAAAGTAAGTTAACACAATCAAATGGGAGCTATATT 2043

Qy   1215 --------- 1215
Db   2044 TGTCCTGGCTG-----TGCCTATTTCTCATGGAATTGACAGTTTCCTA 1496

Qy   1437 ATATTTGTCTGACTCTGCCCTGTTTTTTATGTCTTTTTTATGTGTTTAAGCTGTAAA 1496
Db   2044 ...

Qy   1497 CAATATCT------CCTCTGTTCTTTTTTAACAGAAAAGGTGTGCAGAGGAGAAGAGATGAGAG 1550
Db   2086 TAATACCTATTGTCATTTTTCTTTTTCACAGAAAAAGTGTGGAGAAAGAAGAACGGGAGAG 2145

Qy   1551 TGACAAAGTTCCTAGACTACCTGCAAGTATTACTTTGGGTGTAATAAAACACCGGAGTGGACAC 1610
Db   2146 TAAACCAATTCCTAGACTACCTGCAAGAGTTTTCTTGTGTAATGAACACCCGAGTTGGATAA 2205

Qy   1611 CGGAAAGTTGAGAACAAAACCCGGCCTTAATGTGTAGTGGAAGAGATTTTTGGAG 1657
Db   2206 TAGAAAGTTGAGACTAAAACTGGTTTTGTTGCAGCCAAAGATTTTGGGAG 2252
```

```
; Sequence 89, Application US/10801101A
; Publication No. US20050142102A1
; GENERAL INFORMATION:
;  APPLICANT: SCHAEBITZ, WOLF-RUEDIGER
;  APPLICANT: SCHNEIDER, ARMIN
;  APPLICANT: KRUEGER, CAROLA
;  APPLICANT: SOMMER, CLEMENS
;  APPLICANT: SCHWAB, STEFAN
;  APPLICANT: KOLLMAR, RAINER
;  APPLICANT: MAURER, MARTIN
;  APPLICANT: WEBER, DANIELA
;  APPLICANT: GASSLER, NIKOLAUS
;  TITLE OF INVENTION: METHODS OF TREATING NEUROLOGICAL CONDITIONS WITH HEMATOPOEITIC
;  TITLE OF INVENTION: GROWTH FACTORS
;  FILE REFERENCE: 254622US
;  CURRENT APPLICATION NUMBER: US/10/880,101A
;  CURRENT FILING DATE: 2004-06-30
;  PRIOR APPLICATION NUMBER: PCT/IB03/006446
;  PRIOR FILING DATE: 2003-12-31
;  PRIOR APPLICATION NUMBER: US 10/659,295
;  PRIOR FILING DATE: 2003-09-11
;  PRIOR APPLICATION NUMBER: US 10/331,755
;  PRIOR FILING DATE: 2002-12-31
;  NUMBER OF SEQ ID NOS: 94
;  SOFTWARE: PatentIn version 3.3
; SEQ ID NO 89
;  LENGTH: 3230
;  TYPE: DNA
;  ORGANISM: Homo sapiens
US-10-880-101A-89

Query Match             36.2%;  Score 600.6;  DB 22;  Length 3230;
Best Local Similarity   67.8%;  Pred. No. 1.3e-113;
Matches  1212;  Conservative    0;  Mismatches  384;  Indels  191;  Gaps  19;

Qy      1 AGGCAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTGAATTTGAGGTTTGCTAGCTC 60
            |||||| ||||||||||||||||||| || |||||| ||||||||  ||||||| |||||||
Db    527 AGGCAAACGAGAACGTTTCAGAGCCCATGAGAGGATGCTTCTGCGCATTGAGTTTTGCTAGCTC 586

Qy     61 TTGGGGCCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAATCCCATGAATAGACTGGGTGGGCAG 120
            |||| ||| ||||||||| |||||  |||  |||| | |||||||||| |||||| ||||||||
Db    587 TTGGAGCTGCCTACGTGTATGCCATCCCACAGAAATTCCCAAGTGCATTGGTGTAAAG 646

Qy    121 AGACCTTGACACTGCTCTCCACTCATCGACTCATCGACTGGGCTGATAGGCCGATGGGGGTAATTTCT 180
            | ||| | ||||| |  ||||||||  |||| |||||| |||||||||||||||||||||||||||||
Db    647 AGACCTTGGCACTGCTTTCTCACTCATCGACTCTCGCTGATAGCCAATGAGGTAATTTCT 706

Qy    181 TTTTGATTCCTACAGTCTTTAAAATCGATGGTGGTTGGTGTGGGTGGCTAGTT------ 234
            ||||||||| |||||||| |||||||  || || || |||  ||| |||||||
Db    707 TTATGATTCCTACAGTCTGTAAAGTCGCATAGTGGTAATCATTTGTGATGGTTCCTTTACTATAT 766

Qy    235 -TTTAAAGATCCATTATCAATAAATGAAGTAATGACTGTTAATAATAATTAAGATCTGAG 293
             |||| |  || ||  |||||| |  ||| ||  |||  |||||||||| ||||| |||||
Db    767 ATATAGAGATCTGTTATTAAAATAAGTAATCTGAG-CACATTAGTACATGGGTGATAACT 825

Qy    294 ATGTTACTCAGAAGAATTATATTATGAACCTTACATACATTAAAATGAAATG 353
            | || | | | |||||||||||||||||| || |  | | ||||||||||  |
Db    826 ACATCACCAGCAAACATTCTGTTAAAAGTTATGAATGCTCGGTGCTGTAAAAATGATTG 885

Qy    354 TTGTTTCCTTTCTTTTTCAGAACCTTAAAATGTTATTCCTACTCCTGAAAATATAAAATGTAAGTT 413
            |||||||| ||||||||| |||| || |  | | |  || || || |   || || |||||||||||
Db    886 -TATTTCCTTTCCTCTCCCAGAATTCCTGTTCCGTTACATTAAATAGTAAGTT 944

Qy    414 AAAATTATTGATTAAAAATGATTACATGAATCAG-----TTTCATATTTTTAAGCTATATAAA 469
            ||||| || || | |||| |||| |||| |||||     |||| |||||||||||| |||||||
Db    945 AAAATTATGATTCAGTAAAAATGACATGAATAAAATTTCCTGTTTTTTAAGCTGTAAA 1004

Qy    470 GTATCAGTTAACATTGGGATGAGATTTAATTTTATCTATTTTTTGTTTTATGTGTGCCGGATGT 529
            |   ||| |  | || | |  ||||| ||||||  |  ||| || |  | ||   | ||||| ||
Db   1005 TCATTAGTTATCATTGGAACTATTTTAATTTTTCATATTTTTTTTCTTTTCATTATTGGGGCTGGTGGCTGTGT 1064

Qy    530 AAAT-TATGTGCTTATGTAATTATTAGGAAATGGCTCTTACACAATATTAAGTA 588
            ||| |  ||  |||| ||| |  || |||||| ||| ||| |||||||||||||
Db    530 TCATTAGTTATCATTGGAACTATTTTAATTTTTCTTTTTGTTTTCATTATTGGGGCTGGTGGCTGTGT ... 

Db   1065 GAATGTCTGTACTTATTAAAATATGAGGAATGACTTT----------------TTATCAAGTA 1109
             |||||| |  || || |||| || |||| ||||| || ||            |||||||||||
Qy    589 GAATCCATTAAGCAAGTGGATCAGGCGCCCCTTTTTTCTTTATGAGTTGTTGCTTCAGTTGCTCTCAGTATCCCAAAG 648

Qy    649 AGCCTCGTGTGCAGGCATTCTTCTTTCCCAAAAGAATTCCATATTGGGTCGAGAGAACTTCCTTAG 708
            ||| || | ||| |  || |||||||  ||||| |||| ||| ||||||| ||||| |||| ||||
Db   1110 GAATCCTTAAAACAAGTGGATTAGGCTCTTTGGTGTGTGGTTGTTAGGTTGCCTTCCCAAAG 1169

Qy    709 GCTCCATTCACCTCTGTCGTTGGCTTCCTCACCCTCACACGTTTTTCTGAAAGTACTAGCA 768
            ||| || | ||| ||| |||| |  ||| | |  ||| ||| |||||| || | ||||||
Db   1170 AGCATCGTGTCAGG-ATTCTTCCAGAGGAGTTCCACACTGAGTGGTGGCTGTAG 1228

Db   1229 TCTCCGTGCAGTTCTGAC------TCTTTCTCACTCTAAGCGTGTTTCCGAAAGTTATTAGCA 1283
             |||| | |||  ||| |       ||||||| ||| |||| || || | |||| |||||||||
Qy    769 ACTTGGGGGTTTTATTATTTTTAGGAATTATGGTGTCAGTAGACATGAAAATATACAGTGAAGTGCT 828

Qy    829 ATATTAATAGTCACTTCCACATATTTTAAATGATTTTTAAATGATTTTTAAACTCTAATGGAATCATATACAT 888
            || ||||||| ||| | | || |||||| || |||||||  ||| ||  ||| | |  | ||||| |||||||
Db   1284 ACTCAGAATTATATTTTTTAGAACCATGATCAGTAGACATTAAAAATATAACAAAATGCC- 1342

Db   1343 --CTATATTAATAAATTCTGCATTACTTAAATAATAATATGACTATATGATTGCAT 1400
               ||| || | |||| | |||| | ||| ||| |  | |||| || || |||||
Qy    889 CTGGAGTAGTGCATGGTCATTATCAATTTAAAAATGTTAAAAAAATGTTAAAAGTTAAATAACAGTCTAAATGA 948

Qy    949 ATAAAATTACCAGCTACGAAACTATACGAGGAAATTCTGAGGTGAGGTAAATCAGTAAGGCA 1008
            ||||||||||| || | |  |||||||| | ||||| |||||| |||| ||||||||||||||
Db   1401 TGAATATG---CCTGGTCATTATTAAAATGTAAAAATATATATATTT-ATTAGTCTAAAATAGA 1456

Db   1457 ATAAAACTACCAGCCTAGAACTGTAGAAAACACAT--TGAATGAGAGTTTAAATGTATAATGC- 1513
             |||||| |||| || || |  || ||||| ||||   ||| |||| ||| |||||| || ||
Qy   1009 GTTGTATTATACCTCGTAAGCACATTTATTTTCATTTATCATTTATTTATTATATTTGTA 1068

Qy   1069 ACACTTCTCAGTAATTTATAAAACATCATTTAC-TTATGTAATTTAATTAGCTTAGTAATAAG 1127
            |||||| || || |   || ||| |||||||||  ||| |||||  || || |||| | | ||
Db   1514 -----ATTACACTTCCAAAAACATTTTTTCCAGTTACATAATTTAAGTTATATCCTTTATA 1568

Db   1569 AAACTCCTCAGTGTAATCATTAAAGTTATATAAAAAGTTTTATCTTGAATTGTTAAATATGTG 1628
             ||||| ||||| | || | ||||||| || |  ||| |||| |||| | || ||| ||||||
Qy   1128 GTGGTTTCCCACCTGGAAAAGAACAACAAGTAAAAACCTCTTGGGAGAAGAGGGAACTTGTGTCA 1187

Qy   1188 AACCCCACAAAAACAAAGTCTAACTTTT-------- 1214
            |||| | ||||| |||| | |  || |||
Db   1629 GTGGTTGTTGCCTAGAAA-----ACAAACAAAAACTCTTTGGGAGAGGGAACTCATGTA 1684

Db   1685 AATACCACAAAAACAAAGCCTAACTTTGTGGACCAAAAATTGTTTAATAATTATTTTTTAA 1744
             || || |||| | ||| ||| || || | |  |||| |||| ||| ||| ||||||
Qy   1215 ----------------------------------------------------- 1214

Db   1745 TTGATGAATTAAAAAGTATATATAATATAGTACAATATGAGTTGGAGTAGTAT 1804
             ||  || ||||| | || ||||| |  | | ||||||| || |||| ||
Qy   1215 TTGGACCAAAATTTTGTTTTGATGATTTTAATTGCCTGTTGATATATTTT 1256

Qy   1257 TAAAATCTTCCTCATTTAGCACCAACTGTGCATTAAAGAGAGTTTTTCAGGGGTATAGAGACAC 1316
            |||| || || || ||||| |||||||| | |||||||| |||||| ||| || ||||||||||
Db   1805 ACATTGCAGAATGGACAAATGGACCAAATTTTATACCTTGTCGATATTCCA-TTTT 1863

Db   1864 AAAAAATTTTCCTCATTTAGCACAACGTGCCACTGAGAGAAATAGGCAC 1923
            ||||| ||||| || |||||| || | |||| ||| ||| || |||||
Qy   1317 ATTGAAGAACAAACTGCCCACAGGGAGGAGGCTGGATAAAACTATTCCAAAACTTGTCTTT 1376

Qy   1377 AATAAAAGAACACATAGAGCGCGCCCAAAAAGTAGTTAAAGACATTGGCAAAAACTTAAGT 1436
            || |||| ||||| | |||| | || ||||| |||||||| |||||| |||| |||||||
Db   1924 ACTGGAGGAGTCAAACTGTCAAAGGGTACTTGCTAGATAAACATTTCAAAAAACTTGTCCTT 1983

Db   1984 AATAAAAGAAATACATTGACACGGCCAAAAAGTAGTTACAGAGCTATATT 2043
            || |||||||| ||||| || | ||| |||| || || |||| ||||||
Qy   1437 ATATTTGTCTGACTCTGCCTCGTTTTTTTTTTTACAAGAATTGACAGTTCCTA 1496

Qy   1497 CAATATCT-----CCTCGTTCTTTTAACAGAAAAAGGTGTGCAGGAGGATGGAG 1550
            ||| |||      || ||| ||||| |||| || |||| | ||| ||| |||||
Db   2044 TGTCCTGGCTG-----TGCCTATTTCTATGGATTGAGTTTCCTG 2085

Db   2086 TAATACCTATTGTCATTTTCTTTTTCACAGAAAAAGTGTTGGAGAAGAAGCGGAGAG 2145
             |||| || | ||| |||| |||||||||||||| ||| | ||| || |||| ||||
Qy   1515 ...
```

Qy 1551 TGACAAAGTTCCTAGACTACCTGCAAGTAGTACACACGAGTGGACAC 1610
Db 2146 TAAACCAATTCCTAGACTACCTGCGAAGAGTTTCTTGGTGTTAATGAACACCGAGTGGATAA 2205

Qy 1611 CGGAAAGTTGAGAGACAAACCGGCTTATTGTAGTGGAAGAGATTTTGGAG 1657
Db 2206 TAGAAAGTTGAGACTAAAACTCGGTTTGTTGCAGCCAAAAGATTTTGGAG 2252

RESULT 9
US-09-755-633-21
; Sequence 21, Application US/09755633
; Patent No. US20020127200A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/09/755,633
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: Patentin Ver. 2.1
; SEQ ID NO 21
; LENGTH: 671
; TYPE: DNA
; ORGANISM: Canis familiaris
US-09-755-633-21

Query Match   24.5%; Score 406; DB 9; Length 671;
Best Local Similarity   100.0%; Pred. No. 9.8e-74;
Matches 406; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 AGGCAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTC 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 AGGCAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTC 60

Qy   61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTGTAGAGAAATGACTGGTGGGCAG 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTGTAGAGAAATGACTGGTGGGCAG 120

Qy 121 AGACCTTGACACTGCTCCTCCACTCATCGAACTTGGCTGATAGGCGGGGTAATGTTTTCT 180
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 121 AGACCTTGACACTGCTCCTCCACTCATCGAACTTGGCTGATAGGCGGGGTAATGTTTTCT 180

Qy 181 TTTTGATTCCTACAGTCTCTTTAAAAATGCATGGGGTAATGGTGGTGGTGGCTAGTTTTTAAA 240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 181 TTTTGATTCCTACAGTCTCTTTAAAAATGCATGGGGTAATGGTGGTGGTGGCTAGTTTTTAAA 240

Qy 241 GATCCATTATCAATAATGAAGTAAATGAGGTGTTAATAATAATATAATATAATGGGTAACCATGTTAC 300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 241 GATCCATTATCAATAATGAAGTAAATGAGGTGTTAATAATAATATAATATAATGGGTAACCATGTTAC 300

Qy 301 TCAGAAGAATTATATTATTAAAAGTTATGAACCTTACAATACATTAAAAATGAAATGTTGTTTC 360
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 301 TCAGAAGAATTATATTATTAAAAGTTATGAACCTTACAATACATTAAAAATGAAATGTTGTTTC 360

Qy 361 CTTTCTTTTTCAGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 406
        ||||||||||||||||||||||||||||||||||||||||||||||
Db 361 CTTTCTTTTTCAGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 406

RESULT 10
US-10-787-382-21
; Sequence 21, Application US/10787382
; Publication No. US20040191868A1
; GENERAL INFORMATION:

; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/10/787,382
; CURRENT FILING DATE: 2004-02-24
; PRIOR APPLICATION NUMBER: US/09/755,633
; PRIOR FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21
; SOFTWARE: Patentin Ver. 2.1
; SEQ ID NO 21
; LENGTH: 671
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-787-382-21

Query Match   24.5%; Score 406; DB 19; Length 671;
Best Local Similarity   100.0%; Pred. No. 9.8e-74;
Matches 406; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 AGGCAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTC 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 AGGCAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTC 60

Qy   61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTGTAGAGAAATGACTGGTGGGCAG 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTGTAGAGAAATGACTGGTGGGCAG 120

Qy 121 AGACCTTGACACTGCTCCCACTCATCGAACTTGGCTGATAGGCGGGGTAATGTTTTCT 180
        ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 121 AGACCTTGACACTGCTCCCACTCATCGAACTTGGCTGATAGGCGGGGTAATGTTTTCT 180

Qy 181 TTTTGATTCCTACAGTCTCTTTAAAATGCATGGGGTAATGGTGGTGGTGGCTAGTTTTTAAA 240
        ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 181 TTTTGATTCCTACAGTCTCTTTAAAATGCATGGGGTAATGGTGGTGGTGGCTAGTTTTTAAA 240

Qy 241 GATCCATTATCAATAATGAAGTAAATGAGGTGTTAATAATAATATAATAATGGGTAACCATGTTAC 300
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 241 GATCCATTATCAATAATGAAGTAAATGAGGTGTTAATAATAATATAATAATGGGTAACCATGTTAC 300

Qy 301 TCAGAAGAATTATATTATTAAAAGTTATGAACCTTACAATACATTAAAAATGAAATGTTGTTTC 360
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 301 TCAGAAGAATTATATTATTAAAAGTTATGAACCTTACAATACATTAAAAATGAAATGTTGTTTC 360

Qy 361 CTTTCTTTTTCAGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 406
        ||||||||||||||||||||||||||||||||||||||||||||||
Db 361 CTTTCTTTTTCAGAACCTGATGATTCCTACTCCTGAAAATAAAAAT 406

RESULT 11
US-09-755-633-4
; Sequence 4, Application US/09755633
; Patent No. US20020127200A1
; GENERAL INFORMATION:
; APPLICANT: Yang, Shumin
; APPLICANT: McCall, Catherine A.
; APPLICANT: Weber, Eric R.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C1-C1
; CURRENT APPLICATION NUMBER: US/09/755,633
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 21

```
;  SOFTWARE:  PatentIn Ver. 2.1
;
;  SEQ ID NO 4
;  LENGTH: 610
;  TYPE: DNA
;  ORGANISM: Canis familiaris
;  FEATURE:
;  NAME/KEY: CDS
;  LOCATION: (29)..(430)
US-09-755-633-4

Query Match             10.4%;  Score 171.8;  DB 9;  Length 610;
Best Local Similarity   93.7%;  Pred. No. 2.1e-25;
Matches  179;  Conservative   0;  Mismatches  12;  Indels   0;  Gaps   0;

Qy          1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          3 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 62

Qy         61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTGAGAAAATCCCATGAATAGAGACTGGTGGGCAG 120
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         63 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTGAGAAAATCCCATGAATAGAGACTGGTGGGCAG 122

Qy        121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGGTAATTTCT 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        123 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGGTAATTTCT 182

Qy        181 TTTTGATTCCT 191
              |||||||||||
Db        183 TTCCTACTCCT 193
```

```
RESULT 12
US-09-755-633-6/c
;  Patent No. US20020127200A1
;  Sequence 6, Application US/0975633
;  GENERAL INFORMATION:
;  APPLICANT: Yang, Shumin
;  APPLICANT: McCall, Catherine A.
;  APPLICANT: Weber, Eric R.
;  TITLE OF INVENTION:  CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;  TITLE OF INVENTION:  ACID MOLECULES, AND USES THEREOF
;  FILE REFERENCE: IM-2-C1-C1
;  CURRENT APPLICATION NUMBER: 09/322,409
;  CURRENT FILING DATE: 2001-01-05
;  PRIOR APPLICATION NUMBER: 09/322,409
;  PRIOR FILING DATE: 1999-05-28
;  PRIOR APPLICATION NUMBER: 60/087,306
;  PRIOR FILING DATE: 1998-05-29
;  NUMBER OF SEQ ID NOS: 21
;  SOFTWARE:  PatentIn Ver. 2.1
;
;  SEQ ID NO 6
;  LENGTH: 610
;  TYPE: DNA
;  ORGANISM: Canis familiaris
US-09-755-633-6

Query Match             10.4%;  Score 171.8;  DB 9;  Length 610;
Best Local Similarity   93.7%;  Pred. No. 2.1e-25;
Matches  179;  Conservative   0;  Mismatches  12;  Indels   0;  Gaps   0;

Qy          1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        608 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 549

Qy         61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTGAGAAAATCCCATGAATAGAGACTGGTGGGCAG 120
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        548 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTGAGAAAATCCCATGAATAGAGACTGGTGGGCAG 489

Qy        121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGGTAATTTCT 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        488 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGAACCTGATGA 429

Qy        181 TTTTGATTCCT 191
              |||||||||||
Db        181 TTTTGATTCCT 191
```

```
Db        428 TTCCTACTCCT 418
```

```
RESULT 13
US-10-218-654-80
;  Sequence 80, Application US/10218654
;  Publication No. US2003009609A1
;  GENERAL INFORMATION:
;  APPLICANT: Sim, Gek-Kee
;  APPLICANT: Yang, Shumin
;  APPLICANT: Dreitz, Matthew J.
;  APPLICANT: Wonderling, Ramani S.
;  TITLE OF INVENTION:  CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;  TITLE OF INVENTION:  ACID MOLECULES, AND USES THEREOF
;  FILE REFERENCE: IM-2-C1
;  CURRENT APPLICATION NUMBER: US/10/218,654
;  CURRENT FILING DATE: 2002-08-13
;  PRIOR APPLICATION NUMBER: US/09/322,409
;  PRIOR FILING DATE: 1999-05-28
;  PRIOR APPLICATION NUMBER: 60/087,306
;  PRIOR FILING DATE: 1998-05-29
;  NUMBER OF SEQ ID NOS: 154
;  SOFTWARE:  PatentIn Ver. 2.0
;
;  SEQ ID NO 80
;  LENGTH: 610
;  TYPE: DNA
;  ORGANISM: Canis familiaris
;  FEATURE:
;  NAME/KEY: CDS
;  LOCATION: (29)..(430)
US-10-218-654-80

Query Match             10.4%;  Score 171.8;  DB 14;  Length 610;
Best Local Similarity   93.7%;  Pred. No. 2.1e-25;
Matches  179;  Conservative   0;  Mismatches  12;  Indels   0;  Gaps   0;

Qy          1 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          3 AGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 62

Qy         61 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTGAGAAAATCCCATGAATAGAGACTGGTGGGCAG 120
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         63 TTGGGGCTGCCTATGTTTCTGCCTTTGCTGTGAGAAAATCCCATGAATAGAGACTGGTGGGCAG 122

Qy        121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGGTAATTTCT 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        123 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGAACCTGATGA 182

Qy        181 TTTTGATTCCT 191
              |||||||||||
Db        183 TTCCTACTCCT 193
```

```
RESULT 14
US-10-218-654-82/c
;  Sequence 82, Application US/10218654
;  Publication No. US20030099609A1
;  GENERAL INFORMATION:
;  APPLICANT: Sim, Gek-Kee
;  APPLICANT: Yang, Shumin
;  APPLICANT: Dreitz, Matthew J.
;  APPLICANT: Wonderling, Ramani S.
;  TITLE OF INVENTION:  CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
;  TITLE OF INVENTION:  ACID MOLECULES, AND USES THEREOF
;  FILE REFERENCE: IM-2-C1
;  CURRENT APPLICATION NUMBER: 2002-08-13
;  PRIOR APPLICATION NUMBER: US/10/218,654
;  PRIOR FILING DATE: 1999-05-28
;  PRIOR APPLICATION NUMBER: US/09/322,409
;  PRIOR FILING DATE: 1999-05-28
;  PRIOR APPLICATION NUMBER: 60/087,306
;  PRIOR FILING DATE: 1998-05-29
;  NUMBER OF SEQ ID NOS: 154
```

```
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 82
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
US-10-218-654-82

Qy      1 AGGCAAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    608 AGGCAAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 549

Qy     61 TTGGGGGCTGCCTATGTTTCTGCCTTTGCTCGTAGAAAATCCCATGAATAGACTGGTGGCAG 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    548 TTGGGGGCTGCCTATGTTTCTGCCTTTGCTCGTAGAAAATCCCATGAATAGACTGGTGGCAG 489

Qy    121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCCGATGGGGTAATTTTCT 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    488 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCCGATGGGGAACCTGATGA 429

Qy    181 TTTTGATTCCT 191
          |||||||||||
Db    428 TTCCTACTCCT 418
```

```
RESULT 15
US-10-262-439-80
; Sequence 80, Application US/10262439
; Publication No. US20030143196A1
; GENERAL INFORMATION:
; APPLICANT: Sim, Gek-Kee
; APPLICANT: Yang, Shumin
; APPLICANT: Dreitz, Matthew J.
; APPLICANT: Wonderling, Ramani S.
; TITLE OF INVENTION: CANINE AND FELINE IMMUNOREGULATORY PROTEINS, NUCLEIC
; TITLE OF INVENTION: ACID MOLECULES, AND USES THEREOF
; FILE REFERENCE: IM-2-C2
; CURRENT APPLICATION NUMBER: US/10/262,439
; CURRENT FILING DATE: 2002-09-30
; PRIOR APPLICATION NUMBER: US/09/451,527
; PRIOR FILING DATE: 1999-12-01
; PRIOR APPLICATION NUMBER: 09/322,409
; PRIOR FILING DATE: 1999-05-28
; PRIOR APPLICATION NUMBER: 60/087,306
; PRIOR FILING DATE: 1998-05-29
; NUMBER OF SEQ ID NOS: 174
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 80
; LENGTH: 610
; TYPE: DNA
; ORGANISM: Canis familiaris
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (29)..(430)
US-10-262-439-80
```

```
  Query Match          10.4%;    Score 171.8;   DB 15;   Length 610;
  Best Local Similarity   93.7%;   Pred. No. 2.1e-25;
  Matches   179;   Conservative  0;   Mismatches  12;   Indels  0;   Gaps  0;

Qy      1 AGGCAAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 60
          |||||||||||| ||||||||||||||||||||||||||||||||||||||||||||||||
Db      3 AGGCAAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTC 62

Qy     61 TTGGGGGCTGCCTATGTTTCTGCCTTTGCTCGTAGAAAATCCCATGAATAGACTGGTGGCAG 120
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     63 TTGGGGGCTGCCTATGTTTCTGCCTTTGCTGGTAGAAAATCCCATGAATAGACTGGTGGCAG 122

Qy    121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCCGATGGGGGTAATTTTCT 180
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||| |
Db    121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCCGATGGGGGTAATTTTCT 180
```

```
Db    123 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCCGATGGGGAACCTGATGA 182

Qy    181 TTTTGATTCCT 191
          |||  ||||||
Db    183 TTCCTACTCCT 193
```

Search completed: August 7, 2005, 19:25:00
Job time : 1378.34 secs

```
                                    GenCore version 5.1.6
                              Copyright (c) 1993 - 2005 Compugen Ltd.


OM nucleic - nucleic search, using sw model

Run on:        August  7, 2005, 18:43:18 ; Search time 7055.44 Seconds
                                            (without alignments)
                                            8944.955 Million cell updates/sec

Title:         US-10-787-382-18
Perfect score: 1658
Sequence:      1 aggcaaacactgaacatttc............gtagtggaagatttggaga 1658
Scoring table: IDENTITY NUC
               Gapop 10.0 , Gapext 1.0
Searched:      34239544 seqs, 19032134700 residues
Total number of hits satisfying chosen parameters:      68479088

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
                 Maximum Match 100%
                 Listing first 45 summaries

Database :     EST:*
               1: gb_est1:*
               2: gb_est2:*
               3: gb_htc:*
               4: gb_est3:*
               5: gb_est4:*
               6: gb_est5:*
               7: gb_est6:*
               8: gb_gss1:*
               9: gb_gss2:*

               Pred. No. is the number of results predicted by chance to have a
               score greater than or equal to the score of the result being printed,
               and is derived by analysis of the total score distribution.


                                              SUMMARIES

                                    #
Result                              Query
No.      Score  Match  Length DB ID     ID            Description
------   -----  -----  ------ -- --      --            -----------
     1     398  24.0      622  9  CE331159    CE331159  tigr-gss-
c    2   205.4  12.4      495  7  CR554944    CR554944  DKF2p469N
c    3   117.4   7.1      817  3  BC069137    BC069137  Homo sapi
c    4   114.8   6.9      463  5  CD559535    CD559535  AGENCOURT
c    5   114.4   6.9      456  3  BC066281    BC066281  Homo sapi
c    6   114.4   6.9      458  3  BC066279    BC066279  Homo sapi
c    7   114.4   6.9      458  3  BC066280    BC066280  Homo sapi
c    8   114.4   6.9      467  6  CD559688    CD559688  AGENCOURT
c    9   114.4   6.9      467  6  CD559690    CD559690  AGENCOURT
c   10   114.4   6.9      470  6  CD559687    CD559687  AGENCOURT
c   11   114.4   6.9      473  6  CD559689    CD559689  AGENCOURT
c   12   114.4   6.9      478  6  CD559534    CD559534  AGENCOURT
c   13   114.4   6.9      492  6  CD559533    CD559533  AGENCOURT
c   14   113.2   6.8      489  6  CD559536    CD559536  AGENCOURT
c   15   111.2   6.7      456  6  CD559686    CD559686  AGENCOURT
c   16   110.8   6.7      456  6  CD559532    CD559532  AGENCOURT
c   17    97.8   5.9      405  6  AY412020    AY412020  Homo sapi
c   18    96.2   5.8      405  6  AY412021    AY412021  Pan trogl
c   19    95.8   5.8      477  6  CD559608    CD559608  AGENCOURT
c   20    95.2   5.7      503  5  BQ598873    BQ598873  MI-P-E4-a
c   21    86.8   5.2      399  9  AY412022    AY412022  Mus muscu
c   22      83   5.0     1101  9  CNS0039G    AL063921  Drosophil
c   23    81.4   4.9     1101  9  CR235404    CR235404  Reverse s
c   24    72.8   4.4      987  9  CNS014PQ    AL104456  Drosophil
c   25    68.6   4.1      737  9  CR026247    CR026247  Reverse s
c   26      68   4.1     1101  9  CNS0039G    AL063921  Drosophil
c   27      68   4.1     1190  9  CNS02ON7    AL206908  Tetraodon
c   28    66.6   4.0     1101  9  CNS017L2    AL108176  Drosophil
c   29    66.4   4.0     1539  9  AG340947    AG340947  Mus muscu
c   30    65.8   4.0     1101  9  CNS0EVL     AL069706  Drosophil
c   31    65.2   3.9      928  9  CNS00DKY    AL071865  Drosophil
c   32      65   3.9     1101  8  CNS00EVL    AL069706  Drosophil
c   33      64   3.9      508  8  AQ248202    AQ248202  HS_2045_B
c   34    64.6   3.9     1101  9  CNS0042W    AL055440  Drosophil
c   35    63.4   3.8     1190  9  CNS02ON7    AL206908  Tetraodon
c   36      63   3.8     1201  9  CNS0167M    AL106396  Drosophil
c   37    62.4   3.8     1225  9  CNS0161D    AL106171  Drosophil
c   38    62.2   3.8     1780  9  AG320553    AG320553  Mus muscu
c   39      61.8  3.7    1896  9  CG753083    CG753083  P048-1-C0
c   40      61   3.7      836  9  CNS02WQ2    AL217379  Tetraodon
c   41      61   3.7      942  8  BH166228    BH166228  ENTOX57TF
c   42    60.8   3.7      625  8  BH509089    BH509089  BOGGW05TF
c   43    60.8   3.7     1101  9  CNS00LT2    AL078714  Drosophil
c   44    60.4   3.6      597  1  AU037847    AU037847  Drosophil
c   45    60.4   3.6     1101  9  CNS003BD    AL064091  Drosophil


                                             ALIGNMENTS


RESULT 1
CE331159
LOCUS       CE331159                     622 bp    DNA     linear   GSS 26-SEP-2003
DEFINITION  tigr-gss-dog-17000033986568 Dog Library Canis familiaris genomic,
            genomic survey sequence.
ACCESSION   CE331159
VERSION     CE331159.1  GI:36147469
KEYWORDS    GSS.
SOURCE      Canis familiaris (dog)
ORGANISM    Canis familiaris
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1  (bases 1 to 622)
AUTHORS     Kirkness,E.F., Bafna,V., Halpern,A.L., Levy,S., Remington,K.,
            Rusch,D.B., Delcher,A.L., Pop,M., Wang,W., Fraser,C.M. and
            Venter,J.C.
TITLE       The dog genome: survey sequencing and comparative analysis
JOURNAL     Science 301 (5641), 1898-1903 (2003)
MEDLINE     22875432
PUBMED      14512627
COMMENT     Contact: Kirkness EF
            The Institute for Genomic Research
            Department of Eukaryotic Genomics, TIGR, 9712 Medical Center Drive,
            Rockville, MD 20850, USA
            Tel: 301-838-0200
            Fax: 301-838-0208
            Email: ekirkness@tigr.org
            Class: shotgun.
FEATURES             Location/Qualifiers
     source          1..622
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
                     /strain="Standard Poodle"
                     /db_xref="taxon:9615"
                     /clone_lib="Dog Library"
                     /note="Site 1: BstXI; Libraries were prepared from
                     peripheral blood"
ORIGIN
Query Match     24.0%;  Score 398;  DB 9;  Length 622;
Best Local Similarity   96.4%;  Pred. No. 6e-71;
Matches  407;  Conservative   0;  Mismatches  15;  Indels  0;  Gaps  0;

Qy   1237 TTTTGATGAATATATTATTTTTTAAAATCTTCCTCATTTAGCACAAACTGTGCATTAAAGAA 1296
          |||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db      3 TTGTTTTGATGAATATATTATTTTTTTAAATCTTCCTCATTTAGCACCAACTGTGCATTAAAGAA 62
```

```
RESULT 2
CRS54944/c
LOCUS       CRS54944        495 bp    mRNA    linear    EST 12-JUL-2004
DEFINITION  DKFZp469N2214_r1 469 (synonym: pkid1) Pongo pygmaeus cDNA clone
            DKFZp469N2214 5', mRNA sequence.
ACCESSION   CRS54944
VERSION     CRS54944.1  GI:5024873
KEYWORDS    EST.
SOURCE      Pongo pygmaeus (orangutan)
ORGANISM    Pongo pygmaeus
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pongo.
REFERENCE   1  (bases 1 to 495)
AUTHORS     Bloecker,H., Boecker,M., Brandt,P., Mewes,H.W., Weil,B., Amid,C.,
            Osanger,A., Fobo,G., Han,M. and Wiemann,S.
TITLE       Pongo pygmaeus mRNA (Bloecker,H., Boecker,M., Brandt,P., et al.)
JOURNAL     Unpublished (2004)
COMMENT     Contact: MIPS
                     Ingolstaedter Landstr.1, D-85764 Neuherberg, Germany
            This is the 5' sequence of the clone insert clone from S. Wiemann,
            Molecular Genome Analysis, German Cancer Research Center (DKFZ);
            Email s.wiemann@dkfz-heidelberg.de; sequenced by GBF (National
            Research Centre for Biotechnology Ltd., Braunschweig/Germany)
            within the cDNA sequencing consortium of the German Genome Project.
            This clone (DKFZp469N2214) is available at the RZPD in Berlin.
            Please contact the RZPD: Resourcenzentrum, Heubnerweg 6, 14059
            Berlin-Charlottenburg, GERMANY; Email: clone@rzpd.de Further
            information about the clone and the sequencing project is available
            at http://mips.gsf.de/projects/cdna/.
FEATURES             Location/Qualifiers
     source          1..495
                     /organism="Pongo pygmaeus"
                     /mol_type="mRNA"
                     /db_xref="taxon:9600"
                     /clone="DKFZp469N2214"
                     /tissue_type="kidney"
                     /dev_stage="adult"
                     /lab_host="DH10B"
                     /clone_lib="469 (synonym: pkid1)"
                     /note="Vector: pSport1_SfiI; Site_1: SfiIA; Site_2: SfiIB"
ORIGIN
Query Match  12.4%; Score 205.4; DB 7; Length 495;

Best Local Similarity 72.1%; Conservative 0; Mismatches 111; Indels 10; Gaps 3;
Matches 312;   Pred. No. 1.5e-31;

Qy  1297 GTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCACGGGGGGGAGGCTGTGGATAA 1356
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    63 GTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCACGGGGGGGAGGCTGTGGATAA 122

Qy  1357 CTATTCCAAAACTTGTCTTTAATAAAAAGAACACATAGAGAGCCCAAAAAGTAAGTTAAAGA 1416
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   123 CTATTCCAAAACTTGTCTTTAATAAAAAGAACACATAGAGAGCCCAAAAAGTAAGTTAAAGA 182

Qy  1417 CATTTGGCAAAAACTTAAAGTATATATTGTGTCTGGACTCTGCCCTGTTTTTTTTTTTTTTA 1476
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   183 CATTTGGCAAAAACTTAAAGTATATATTGTGTCTGCCCTGTTTTTTTTTTTTTTA 242

Qy  1477 CAAGAATTGACAGTTTCCTACAATATCTCCTCGTTTTTTAACAGAAAAAGGTGCAGG 1536
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   243 CAAGAATTGACAGTTTCCTACAATATCTCCTCGTTTCTTTAACAGAAAAAGGTGCAGG 302

Qy  1537 AGAAAGAATGGAGAGTGACAAAGTTCCTAGACTACTACCTGTTCTTTGGTGTGTAATAAA 1596
         |||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   303 AGAAAGAATGGAGAGTGACAAAGTTCCTAGACTACTACCTGTTCTTTGGTGTGTAATAAA 362

Qy  1597 CACCCAGTGGACACCGGAAAAGTTGAGGAACAAAACCGGCCTTATTGTACTGGAAGATTTTGGA 1656
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   363 CACCCAGTGGACACCGGAAAAGTTGAGGAACAAAACCGGCCTTATTGTACTGGAAGATTTTGGA 422

Qy  1657 GA 1658
         ||
Db   423 GA 424
```

```
RESULT 3
BC069137
LOCUS       BC069137        817 bp    mRNA    linear    HTC 26-APR-2004
DEFINITION  Homo sapiens cDNA clone IMAGE:7216996, containing frame-shift
            errors.
ACCESSION   BC069137
VERSION     BC069137.1  GI:46575644
KEYWORDS    HTC.
SOURCE      Homo sapiens (human)
ORGANISM    Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 817)
AUTHORS     Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
            Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
            Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
            Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
            Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
            Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
            Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
            Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
            Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
            McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
            Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
            Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
            Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodrigues,S.,
            Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
            Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
            Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
            Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
            Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
TITLE       Generation and initial analysis of more than 15,000 full-length
            human and mouse cDNA sequences
JOURNAL     Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
PUBMED      12477932
REFERENCE   2  (bases 1 to 817)
AUTHORS     Strausberg,R.

Qy   1 AGGCAAACACTGAACACATTCAGAGCTTATGAGAATGCTT-CTGAATTGAGTTGCTAGCT 59
        |||||||| ||||| |||||||||| |||||||||||||| ||||||||||||||||||
Db 435 AGGCAAACGCAGAACAGTTCCAGAGCCACGAGGAGGATGCTTCCTGCATTGAGTTTGCTAGCT 376

Qy  60 CTTGGGGCTGCCTACTGTTTCTGCCCTTTGCTGTTAGAAAAATCCATGAATAGACTGGTG... 119
        ||||||||||| || |||  |||||||||||||||||| ||||||||||||||||||||
Db 375 CTTGGAGCTGCCTACTGTATAGCCCATCCCACCAGAAATTCCCACAAGTGCAATTGGTGAAA 316

Qy 120 GAGACCTTGACACTGCTCTCCCACTCATCGAACTTGGCTGTGATAGGCGGATGGGGGTAATTTC 179
        |||||||| ||||||| ||||||| ||||||| |||||||||||||||||||||--------
Db 315 GAGACCTTGGCACTGCTTCTGTTCTCATCGAACTTCCTGATAGGCCAATGAGGTAATTTC 256

Qy 180 TTTTTGATTCCTTACAGTGTCTTTAAAAATGCATGGGGTAAGTGGTGGTGG--------CTA 231
        |||||||||| ||||| ||||||||||||||||||||||||||||||||||        ||
Db 255 TTTACGATTCCTTACAGTGTCTGTAAAGTGCATAGGGTAAATCATTTGTCCTTACTA 196

Qy 232 GTTTTTAAAGAATCAATATGAAGTGAGTGTTAATAATAATATATAATGGGTAA 291
        || | |||||||||| | |||||||||||||| ||||   ||||||||||||
Db 315 TATATCAGAGACCTGTTATATAAATAAGAATTCTGAG-CACGTTAGTTACACATGGGTATAA 137

Qy 292 CCATGTTACTCAGAGAAGAATTATATTTAAAAGTTATGAACCTTACAATTACATTAAAAATGAA 351
        ||||||||||||||||||||||||||||||||||||||||| ||||||||||| ||||||||
Db 136 CTACACCACAACAAACATTCCATTAAAAGGTTATGAGTGCTGGTAGCTGCAAATGAT 77

Qy 352 TGTTGTTTCCTTTTCTTTTTTCAGAAGCTGATGAGTTCCTACTCCTGAAAATAAAAAGTAAG 411
        |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  76 TGTATTCCTTTCTCTCCAGAACTCTGAGGAGTTCCTGTTGTACATAAAAATGTAAG 17

Qy 412 TTAAAATTATGATT 424
        ||||||||||||||
Db  16 TTAAAATTATGATT 4
```

TITLE   Direct Submission
JOURNAL   Submitted (16-APR-2004) National Institutes of Health, Mammalian
           Gene Collection (MGC), Cancer Genomics Office, National Cancer
           Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
           USA
REMARK   NIH-MGC Project URL: http://mgc.nci.nih.gov
COMMENT   Contact: MGC help desk
           Email: cgapbs-r@mail.nih.gov
           Tissue Procurement: Anup Madan, University of Iowa
           cDNA Library Preparation: Anup Madan, University of Iowa
           cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
           DNA Sequencing by: Neurogenomics Research Lab,
           200 B EMRB, University of Iowa, Iowa City, IA-52242
           anup-madan@uiowa.edu
           Jessica Fahey, Tim Nelson, Jae Goon Yoon and Anup Madan
           Clone distribution: MGC clone distribution information can be found
           through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
           This clone has the following problem: frame shifted.
FEATURES   Location/Qualifiers
     source   1..817
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:7216996"
                     /tissue_type="Synthetic constructs"
                     /clone_lib="NIH_MGC_243"
                     /lab_host="TOP10"
                     /note="Vector: pCR Blunt II TOPO"
ORIGIN

Query Match   7.1%;   Score 117.4; DB 3; Length 817;
Best Local Similarity   75.9%; Pred. No. 1.5e-13;
Matches 145; Conservative   0; Mismatches 46; Indels   0; Gaps   0;

Qy   1 AGGCAAAACACTGAACACATTTCAGAGAGCTATAGAGAATGCTTCTTCGAAATTTGAGTTTGCTAGCTC 60
             |||||||| |||||| | || | || || | | |||| | | ||||| ||| ||||||||||||
Db   19 AGGCAAAACGCAGAAACGTTTCAGAGCCATGAGGATGGTTCTTCGGAATTTGAGTTTGCTAGCTC 78

Qy   61 TTGGGGCTGCCTAGTTTCTGCCTTTGCTGTAGAAAAATCCCATGAATAGACTGGGTGGGCCAG 120
             ||||||| ||||| || || || || ||| | |||| || | | ||| || ||||||
Db   79 TTGGAGCTGCCTACGTGTATGCCATCCCCACAGAAAATTCCCACAACGTGCATTTGAGTTTGCTAGCTCT 138

Qy   121 AGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGTAATTTTCT 180
             |||||||| ||| | | |||| ||| || | | || | | | || || || |||
Db   139 AGACCTTGGCACTGCTTTTCTACTCATCGAACTCTGCTGATAGCCAATGAGACTCTGAGGA 198

Qy   181 TTTTGATTTCCT 191
             ||||||||||||
Db   199 TTCCTGTTTCCT 209

RESULT 4
LOCUS   CD559535
DEFINITION CD559535   463 bp   mRNA   linear   EST 26-NOV-2003
           AGENCOURT 14496865 NIH_MGC_195 Homo sapiens cDNA clone
           IMAGE:6971769 5', mRNA sequence.
ACCESSION CD559535
VERSION   CD559535.2 GI:38558950
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
  ORGANISM Homo sapiens
           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
           Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE 1 (bases 1 to 463)
  AUTHORS NIH-MGC http://mgc.nci.nih.gov/.
  TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585603.
           Contact: Daniela S. Gerhard, Ph.D.
           Office of Cancer Genomics
           National Cancer Institute / NIH

           Bldg. 31 Rm10A07 Bethesda, MD 20892
           Email: cgapbs-r@mail.nih.gov
           Tissue Procurement: Narayan Bhat
           cDNA Library Preparation: Narayan Bhat
           cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
           DNA Sequencing by: Agencourt Bioscience Corporation
           Clone distribution: MGC clone distribution information can be
           found through the I.M.A.G.E. Consortium/LLNL at:
           http://image.llnl.gov
           Plate: IRBK1 row: g column: 08
           High quality sequence stop: 463.
FEATURES   Location/Qualifiers
     source   1..463
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971769"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSV.dat
                     a Note: this is a NIH_MGC Library."
ORIGIN

Query Match   6.9%;   Score 114.8; DB 6; Length 463;
Best Local Similarity   75.3%; Pred. No. 5e-13;
Matches 143; Conservative   0; Mismatches 47; Indels   0; Gaps   0;

Qy   2 GGCAAAACACTGAACACATTTCAGAGAGCTATAGAGAATGCTTCTTCGAAATTTGAGTTTGCTAGCTCT 61
             |||||| |||||| | || | || || | | |||| | | ||||| ||| |||||||||||||
Db   3 GACAAACGCAGAAACGTTTCAGAGCCATGAGGATGGTTCTTCGGAATTTGAGTTTGCTAGCTCT 62

Qy   62 TGGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAAATCCCATGAATAGACTGGTGGGCAGA 121
             ||| || |||||| || || || || ||| | |||| || | | ||| || ||||||
Db   63 TGGAGCTGCCTACGTGTATGCCATCCCCACAGAAAATTCCCACAACGTGCATTTGAGTTTGAAAGA 122

Qy   122 GACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATGGGGTAATTTTTCTT 181
             |||||||| ||| | | |||| ||| || | | || | | | || || || ||||
Db   123 GACCTTGGCACTGCTTTTCTACTCATCGAACTCTGCTGATAGCCAATGAGACTCTGAGGAT 182

Qy   182 TTTTGATTTCCT 191
             ||||||||||||
Db   183 TCCTGTTTCCT 192

RESULT 5
LOCUS   BC066281
DEFINITION BC066281   456 bp   mRNA   linear   HTC 12-FEB-2004
           Homo sapiens cDNA clone IMAGE:6971770, containing frame-shift
           errors.
ACCESSION BC066281
VERSION   BC066281.1 GI:42490969
KEYWORDS   HTC.
SOURCE   Homo sapiens (human)
  ORGANISM Homo sapiens
           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
           Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE 1 (bases 1 to 456)

```
AUTHORS   Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
          Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
          Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
          Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
          Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
          Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
          Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
          Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
          Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
          McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
          Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
          Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
          Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodriguez,S.,
          Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
          Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
          Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
          Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
          Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
TITLE     Generation and initial analysis of more than 15,000 full-length
          human and mouse cDNA sequences
JOURNAL   Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
PUBMED    12477932
REFERENCE 2 (bases 1 to 456)
AUTHORS   Strausberg,R.
TITLE     Direct Submission
JOURNAL   Submitted (03-FEB-2004) National Institutes of Health, Mammalian
          Gene Collection (MGC) Cancer Genomics Office, National Cancer
          Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
          USA
REMARK    NIH-MGC Project URL: http://mgc.nci.nih.gov
COMMENT   Contact: MGC help desk
          Email: cgapbs-r@mail.nih.gov
          Tissue Procurement: Narayan Bhat
          cDNA Library Preparation: Bhat Laboratory
          cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
          DNA Sequencing by: Sequencing Group at the Stanford Human Genome
          Center, Stanford University School of Medicine, Stanford, CA 94305
          Web site:     http://www-shgc.stanford.edu
          Contact:  (Dickson, Mark)  mcd@paxil.stanford.edu
          Dickson, M., Schmutz, J., Grimwood, J., Rodriguez, A., and Myers,
          R. M.
          Clone distribution: MGC clone distribution information can be found
          through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
          Series: IRAK Plate: 172 Row: a Column: 17
          This clone was selected for full length sequencing because it
          passed the following selection criteria: matched mRNA gi: 28559032
          This clone has the following problem: frame shifted.
FEATURES             Location/Qualifiers
     source          1..456
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971770"
                     /tissue_type="PCR rescued clones"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH10B"
                     /note="Vector: pDNR-Dual"
ORIGIN
Query Match           6.9%;  Score 114.4;  DB 3;  Length 456;
Best Local Similarity  75.5%;  Pred. No. 6e-13;
Matches  142;  Conservative   0;  Mismatches  46;  Indels   0;  Gaps   0;

Qy          4 CAAACACTGAACATTTCAGAGCTATCAGAANTGCTTCTGAATTTGAGTTTGCTAGCTCTTG 63
              ||||| |||||||||||||||||||||||| |||||||||||| |||||||||||||||||
Db          1 CAAACCCGAACGTTTCAGAGCCATGAGGATGCTTCTGCATTTGAGTTTGCTAGCTCTTG 60

Qy         64 GGGGCTGCCTATATGTTTCTTGCCTTTGCTGTAGCTGAAAAATCCCATGAATAGACTCG 123
              |||| |||||| |||||||  ||||||||||||||||| ||||||||||||||||||||||
Db         61 GAGCTGCCTACGTTGTATGCCATCCCACACAAGTGCATTCGTTGCATTGGTGAGAAAGAGA 120

Qy        124 CCTTGACACTGCTCTCCACTCGAACTTGGCTATAGGCGATGGGGGTAATTTCTTTT 183
              |||||||||| |||||||| ||||||||| |||||| ||  ||||| ||| ||  |
Db        181 CTGTTCCT 188
```

```
Db        121 CCTTGGCACTGCTTTCTACTTCATCGAACTCTGCTGATAGCGCAATGAGACTCTGAGGATTC 180
              |||||| ||||||| |||||| ||||| ||||| ||  ||||||   ||||||    ||||
Qy        184 TGATTCCT 191
              ||||||
Db        181 CTGTTCCT 188
```

RESULT 6
```
BC066279
LOCUS       BC066279                458 bp    mRNA    linear    HTC 12-FEB-2004
DEFINITION  Homo sapiens cDNA clone IMAGE:6971768, containing frame-shift
            errors.
ACCESSION   BC066279
VERSION     BC066279.1   GI:42490901
KEYWORDS    HTC.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 458)
AUTHORS   Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
          Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
          Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
          Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
          Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
          Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
          Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
          Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
          Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
          McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
          Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
          Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
          Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodriguez,S.,
          Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
          Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
          Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
          Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
          Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
TITLE     Generation and initial analysis of more than 15,000 full-length
          human and mouse cDNA sequences
JOURNAL   Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
PUBMED    12477932
REFERENCE 2 (bases 1 to 458)
AUTHORS   Strausberg,R.
TITLE     Direct Submission
JOURNAL   Submitted (03-FEB-2004) National Institutes of Health, Mammalian
          Gene Collection (MGC) Cancer Genomics Office, National Cancer
          Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
          USA
REMARK    NIH-MGC Project URL: http://mgc.nci.nih.gov
COMMENT   Contact: MGC help desk
          Email: cgapbs-r@mail.nih.gov
          Tissue Procurement: Narayan Bhat
          cDNA Library Preparation: Bhat Laboratory
          cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
          DNA Sequencing by: Sequencing Group at the Stanford Human Genome
          Center, Stanford University School of Medicine, Stanford, CA 94305
          Web site:     http://www-shgc.stanford.edu
          Contact:  (Dickson, Mark)  mcd@paxil.stanford.edu
          Dickson, M., Schmutz, J., Grimwood, J., Rodriguez, A., and Myers,
          R. M.
          Clone distribution: MGC clone distribution information can be found
          through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
          Series: IRAK Plate: 172 Row: a Column: 15
          This clone was selected for full length sequencing because it
          passed the following selection criteria: matched mRNA gi: 28559032
          This clone has the following problem: frame shifted.
FEATURES             Location/Qualifiers
     source          1..458
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
```

RESULT 7

```
Query Match        6.9%;  Score 114.4;  DB 3;  Length 458;
Best Local Similarity   75.5%;  Pred. No. 6e-13;
Matches 142;  Conservative   0;  Mismatches  46;  Indels   0;  Gaps   0;

Qy      4 CAAAACTGAACACATTTCAGAGCTTATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTG 63
          ||||||||||||||||| ||| ||||||||||||||||||||||||||||||||||||||||
Db      1 CAAACGCAGAACGTTTCAGAGCCCATGAGGATGCTTCTGCATTTGAGTTTGCTAGCTCTTG 60

Qy     64 GGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAAATCCCATGAAATAGACTCGGTGGGCAGAGA 123
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 GAGCTGCCTTACGTGTATGCCATCCCACAGAAATTCCCACAAGTGCATTGGGTGTGAAAGAGA 120

Qy    124 CCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGGGTAATTTTCTTTT 183
          ||||| ||||||||||| || |||||||||||||||||||||||||||||||||||||||||
Db    121 CCTTGGCACTGCTTTCTACTCATCGAACTCTGCTGATAGCCAATGAGACTCTGAGGATTC 180

Qy    184 TGATTCCT 191
          ||||||||
Db    181 CTGTTCCT 188
```

LOCUS   BC066280   458 bp   mRNA   linear   HTC 12-FEB-2004
DEFINITION Homo sapiens cDNA clone IMAGE:6971769, containing frame-shift
            errors.
ACCESSION   BC066280
VERSION   BC066280.1 GI:4249083B
KEYWORDS   HTC.
SOURCE   Homo sapiens (human)
  ORGANISM Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 458)
  AUTHORS   Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
            Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
            Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
            Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
            Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
            Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
            Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
            Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
            Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
            McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
            Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
            Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
            Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodrigues,S.,
            Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
            Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
            Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
            Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
            Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
  TITLE   Generation and initial analysis of more than 15,000 full-length
            human and mouse cDNA sequences
  JOURNAL   Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
   PUBMED   12477932
REFERENCE   2 (bases 1 to 458)
  AUTHORS   Strausberg,R.
  TITLE   Direct Submission
  JOURNAL   Submitted (03-FEB-2004) National Institutes of Health, Mammalian
            Gene Collection (MGC), Cancer Genomics Office, National Cancer
            Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
            USA
  REMARK   NIH-MGC Project URL: http://mgc.nci.nih.gov
COMMENT   Contact: MGC help desk

            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Sequencing Group at the Stanford Human Genome
            Center, Stanford University School of Medicine, Stanford, CA 94305
            Web site: http://www-shgc.stanford.edu
            Contact: (Dickson, Mark) mcd@paxil.stanford.edu
            Dickson, M., Schmitz, J., Grimwood, J., Rodrigue, A., and Myers,
            R. M.

            Clone distribution: MGC clone distribution information can be found
            through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
            Series: IRAK Plate: 172 Row: a Column: 16
            This clone was selected for full length sequencing because it
            passed the following selection criteria: matched mRNA gi: 28559032
            This clone has the following problem: frame shifted.

FEATURES   Location/Qualifiers
     source   1..458
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971769"
                     /tissue_type="PCR rescued clones"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH10B"
                     /note="Vector: pDNR-Dual"

ORIGIN

RESULT 8

```
Query Match        6.9%;  Score 114.4;  DB 3;  Length 458;
Best Local Similarity   75.5%;  Pred. No. 6e-13;
Matches 142;  Conservative   0;  Mismatches  46;  Indels   0;  Gaps   0;

Qy      4 CAAAACTGAACACATTTCAGAGCTTATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTG 63
          ||||||||||||||||| ||| ||||||||||||||||||||||||||||||||||||||||
Db      1 CAAACGCAGAACGTTTCAGAGCCCATGAGGATGCTTCTGCATTTGAGTTTGCTAGCTCTTG 60

Qy     64 GGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAAATCCCATGAAATAGACTCGGTGGGCAGAGA 123
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 GAGCTGCCTTACGTGTATGCCATCCCACAGAAATTCCCACAAGTGCATTGGGTGTGAAAGAGA 120

Qy    124 CCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGGGTAATTTTCTTTT 183
          ||||| ||||||||||| || |||||||||||||||||||||||||||||||||||||||||
Db    121 CCTTGGCACTGCTTTCTACTCATCGAACTCTGCTGATAGCCAATGAGACTCTGAGGATTC 180

Qy    184 TGATTCCT 191
          ||||||||
Db    181 CTGTTCCT 188
```

LOCUS   CD559688   467 bp   mRNA   linear   EST 19-NOV-2003
DEFINITION AGENCOURT_14496964 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971770 5', mRNA sequence.
ACCESSION   CD559688
VERSION   CD559688.2 GI:38453486
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
  ORGANISM Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 467)
  AUTHORS   .
  TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585756.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat

CD559688
CD559688/c
CD559688.2

Web site: http://www-shgc.stanford.edu

Left column

```
REFERENCE
  AUTHORS    NIH-MGC http://mgc.nci.nih.gov/,
  TITLE      National Institutes of Health, Mammalian Gene Collection (MGC)
SOURCE       Homo sapiens (human)
  ORGANISM   Homo sapiens
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
LOCUS        CDS59690            467 bp    mRNA      linear     EST 19-NOV-2003
DEFINITION   AGENCOURT_14496838 NIH_MGC_195 Homo sapiens cDNA clone
             IMAGE:6971768 5', mRNA sequence.
ACCESSION    CDS59690
VERSION      CDS59690.2  GI:38453490
KEYWORDS     EST.
```

RESULT 9
CDS59690/c

Query Match   6.9%; Score 114.4; DB 6; Length 467;
Best Local Similarity 75.5%; Pred. No. 6.1e-13;
Matches 142; Conservative 0; Mismatches 46; Indels 0; Gaps 0;

```
Qy       4 CAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTG 63
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     466 CAAACCAGAACGTTTCAGAGCCATGAGAGATGCTTCTGCATTTGAGTTTCCTAGCTCTTG 407

Qy      64 GGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAAATCCATGAATAGAACTGGTGGCAGAGA 123
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     406 GAGCTGCCTACGTGTATGCCATCCCACAGAAATTCCCACAAGTGCATTGGTGTAGAAAGAGA 347

Qy     124 CCTTGACACTGCTCTCCACTCATCGAACTCGGCTATGAGGCCGATGGGGTTAATTTTCTTTT 183
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     346 CCTTGGCACTGCTTTCTACTCATCGAACCTGCTGATAGCCAAATGAGACTCTGAGGATTC 287

Qy     184 TGATTCCT 191
           ||||||
Db     286 CTGTTCCT 279
```

```
LOCUS        CDS59687            470 bp    mRNA      linear     EST 19-NOV-2003
DEFINITION   AGENCOURT_14497029 NIH_MGC_195 Homo sapiens cDNA clone
             IMAGE:6971771 5', mRNA sequence.
ACCESSION    CDS59687
VERSION      CDS59687.2  GI:38453484
KEYWORDS     EST.
```

RESULT 10
CDS59687/c

Right column

JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585758.
           Contact: Daniela S. Gerhard, Ph.D.
           Office of Cancer Genomics
           National Cancer Institute / NIH
           Bldg. 31 Rm10A07 Bethesda, MD 20892
           Email: cgapbs-r@mail.nih.gov
           Tissue Procurement: Narayan Bhat
           cDNA Library Preparation: Bhat Laboratory
           cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
           DNA Sequencing by: Agencourt Bioscience Corporation
           Clone distribution: MGC clone distribution information can be
           found through the I.M.A.G.E. Consortium/LLNL at:
           http://image.llnl.gov
           High quality sequence stop: 467.
           Plate: IRBK1 row: g column: 07

FEATURES   Location/Qualifiers
     source   1..467
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971768"
                     /tissue_type="mixed"
                     /clone_lib="NIH_MGC_195"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSv.dat
                     a Note: this is a NIH_MGC Library."

ORIGIN

Query Match   6.9%; Score 114.4; DB 6; Length 467;
Best Local Similarity 75.5%; Pred. No. 6.1e-13;
Matches 142; Conservative 0; Mismatches 46; Indels 0; Gaps 0;

```
Qy       4 CAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGCTCTTG 63
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     466 CAAACCAGAACGTTTCAGAGCCATGAGAGATGCTTCTGCATTTGAGTTTCCTAGCTCTTG 407

Qy      64 GGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAAATCCATGAATAGAACTGGTGGCAGAGA 123
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     406 GAGCTGCCTACGTGTATGCCATCCCACAGAAATTCCCACAAGTGCATTGGTGTAGAAAGAGA 347

Qy     124 CCTTGACACTGCTCTCCACTCATCGAACTCGGCTATGAGGCCGATGGGGTTAATTTTCTTTT 183
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     346 CCTTGGCACTGCTTTCTACTCATCGAACCTGCTGATAGCCAAATGAGACTCTGAGGATTC 287

Qy     184 TGATTCCT 191
           ||||||
Db     286 CTGTTCCT 279
```

SOURCE   Homo sapiens (human)
  ORGANISM Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 470)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585755.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBK1 row: g column: 10
            High quality sequence start: 14
            High quality sequence stop: 470.
FEATURES   Location/Qualifiers
     source   1..470
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971771"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presv.dat
                     a Note: this is a NIH_MGC Library."
ORIGIN

Query Match   6.9%; Score 114.4; DB 6; Length 470;
Best Local Similarity 75.5%; Pred. No. 6.1e-13;
Matches 142; Conservative 0; Mismatches 46; Indels 0; Gaps 0;

Qy   4 CAAACACTGAACATTTCAGAGCTATGAGAAAATCCCATGAAATGACTGGTGTGGGCAGAGA 63
            ||||| || || ||||||||||| |||| ||||||| |||||||||||||||||||||||
Db   469 CAAACGGAACGTTTCAGAGCCATGAGGATGCCTTCTGCAATTTGAGTTTGCTAGCTCTTG 410

Qy   64 GGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAATCCCATGAAATGACTGGTGTGGGCAGAGA 123
            ||||||||||| || |||| ||||| |||| | ||||||||| ||||||||||||||||||
Db   409 GAGCTGCCTACGTTATGCCATCCCCACAGAAATTCCCACAAGTGCATTGGTGAAAGAGA 350

Qy   124 CCTTGACACTGCTCTCCACTCATCGAACTCGCTGATAGGCGATAGGGGTAATTTCTTT 183
            ||||| ||||||| | ||||||||||| |||||||| | || ||||||||||||||||
Db   349 CCTTGGCACTGCTTTACTCATCGAACTCTGCTGATAGCCAATGAGACTCGAGGATTC 290

Qy   184 TGATTCCT 191
            | |||||||
Db   289 CTGTTCCT 282

RESULT 11
LOCUS   CD559689   473 bp   mRNA   linear   EST 19-NOV-2003
DEFINITION CD559689/c
            AGENCOURT_14496901 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971769 5', mRNA sequence.
ACCESSION   CD559689
VERSION   CD559689.2 GI:38453487
KEYWORDS   EST.
SOURCE   Homo sapiens (human)
  ORGANISM Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1 (bases 1 to 473)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE   National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585757.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBK1 row: g column: 08
            High quality sequence start: 16
            High quality sequence stop: 473.
FEATURES   Location/Qualifiers
     source   1..473
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971769"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
                     PCR products are directionally cloned into the loxP sites
                     of the pDNR-Dual vector. Library constructed by Dr.
                     Narayan Bhat, Earl Bere III and Hongling Liao (Gene
                     Expression Laboratory, Research Technology Program, SAIC
                     Frederick, NCI-Frederick, Frederick, MD 21702). For
                     information on which gene each clone represents, please
                     visit our anonymous ftp site at
                     ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presv.dat
                     a Note: this is a NIH_MGC Library."
ORIGIN

Query Match   6.9%; Score 114.4; DB 6; Length 473;
Best Local Similarity 75.5%; Pred. No. 6.1e-13;
Matches 142; Conservative 0; Mismatches 46; Indels 0; Gaps 0;

Qy   4 CAAACACTGAACATTTCAGAGCTATGAGAATGGCTTCTGAAATTGAGTTTGCTAGCTCTTG 63
            ||||| || || ||||||||||| |||| ||||| |||||||||||||||||||||||||
Db   472 CAAACGGAACGTTTCAGAGCCATGAGGATGCCTTCTGCAATTTGAGTTTGCTAGCTCTTG 413

Qy   64 GGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAATCCCATGAAATAGACTGGTGTGGGCAGAGA 123
            ||||||||||| || |||| ||||| |||| | ||||||||| ||||||||||||||||||
Db   412 GAGCTGCCTACGTTATGCCATCCCCACAGAAATTCCCACAAGTGCATTGGTGAAAGAGA 353

Qy   124 CCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGATAGGGGTAATTTCTTT 183

RESULT 12

```
Db    352 CCTTCGGCACTGCTTCTACCTCATCGAAGTTGGCTACGATAGCCAATCAGACTCTGAGAGATTC 293
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||  ||
Qy    184 TGATTCCT 191
          ||||||||
Db    292 CTGTTCCT 285
```

Db CD559534
Qy CD559534
Db 292 CTGTTCCT 285

LOCUS CD559534 478 bp mRNA linear EST 26-NOV-2003
DEFINITION AGENCOURT 14496928 NIH_MGC_195 Homo sapiens cDNA clone
 IMAGE:6971770 5', mRNA sequence.
ACCESSION CD559534
VERSION CD559534.2 GI:38558949
KEYWORDS EST.
SOURCE Homo sapiens (human)
ORGANISM Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE 1 (bases 1 to 478)
AUTHORS National Institutes of Health, Mammalian Gene Collection (MGC)
TITLE NIH-MGC http://mgc.nci.nih.gov/.
JOURNAL Unpublished (1999)
COMMENT On Jun 10, 2003 this sequence version replaced gi:31585602.
 Contact: Daniela S. Gerhard, Ph.D.
 Office of Cancer Genomics
 National Cancer Institute / NIH
 Bldg. 31 Rm10A07 Bethesda, MD 20892
 Email: cgapbs-r@mail.nih.gov
 Tissue Procurement: Narayan Bhat
 cDNA Library Preparation: Bhat Laboratory
 cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
 DNA Sequencing by: Agencourt Bioscience Corporation
 Clone distribution: MGC clone distribution information can be
 found through the I.M.A.G.E. Consortium/LLNL at:
 http://image.llnl.gov
 Plate: IRBKl row:g column: 09
 High quality sequence start: 3
 High quality sequence stop: 478.

FEATURES Location/Qualifiers
source 1..478
 /organism="Homo sapiens"
 /mol_type="mRNA"
 /db_xref="taxon:9606"
 /clone="IMAGE:6971770"
 /tissue_type="mixed"
 /lab_host="DH5A (T1 phage-resistant)"
 /clone_lib="NIH_MGC_195"
 /note="Vector:pDNR-Dual; Site 1; loxP-SalI; Site 2:
 loxP-HindIII; Clones from this library have been
 PCR-amplified using gene-specific primers to contain the
 complete open reading frame (based on known gene sequences
 available from NCBI's RefSeq). Template for PCR is cDNA
 derived from either pooled total RNA from 10 different tissues
 cells lines or pooled total cytoplasmic polyA RNA from 30
 (from BD Biosciences/Clontech and Washington University).
 PCR products are directionally cloned into the loxP sites
 of the pDNR-Dual vector. Library constructed by Dr.
 Narayan Bhat, Earl Bere III and Hongling Liao (Gene
 Expression Laboratory, Research Technology Program, SAIC
 Frederick, NCI-Frederick, Frederick, MD 21702). For
 information on which gene each clone represents, please
 visit our anonymous ftp site at
 ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presV.dat
 a Note: this is a NIH_MGC Library."

ORIGIN

Query Match 6.9%; Score 114.4; DB 6; Length 478;
Best Local Similarity 75.5%; Pred. No. 6.1e-13;
Matches 142; Conservative 0; Mismatches 46; Indels 0; Gaps 0;

Qy 4 CAAACACTGAACATTCAGAGCTATGAGAATGCTTCGAATTGAGTTGCTAGCTCTG 63

RESULT 13

```
Db    22 CAAACCCAGAACGTTTCAGACCCATGAGACCATGAAGTAGAGGAGCTTCTGCATTGAGTTTGCATTGAGTTTGCTAGCTCTG 81
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Qy    64 GGGGCTGCCTATGTTTCTGCCTTTGTGTAGTAGAAAATCCATGAATAGGACTGGTGGCAGGA 123
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    82 GAGCTGCCTACGTGTATGCCAATCCCACAGAAAATTCCACAGAGTTGCATTGGTGAAAGAGA 141
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Qy   124 CCTTGGACACTGCTTCCACTCATCGAACTTGGCTCGATAGGGGGTAATTTCTTT 183
          |||||||||||||||||||||||||||||||||||||||||||||||||  ||
Db   142 CCTTCGGCACTGCTTCTACCTCATCGAACTTGGCTGATAGCCAATGAGACTCTGAGGATTC 201
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||  ||
Qy   184 TGATTCCT 191
          ||||||||
Db   202 CTGTTCCT 209
```

LOCUS CD559533 492 bp mRNA linear EST 26-NOV-2003
DEFINITION AGENCOURT 14496993 NIH_MGC_195 Homo sapiens cDNA clone
 IMAGE:6971771 5', mRNA sequence.
ACCESSION CD559533
VERSION CD559533.2 GI:38558947
KEYWORDS EST.
SOURCE Homo sapiens (human)
ORGANISM Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE 1 (bases 1 to 492)
AUTHORS National Institutes of Health, Mammalian Gene Collection (MGC)
TITLE NIH-MGC http://mgc.nci.nih.gov/.
JOURNAL Unpublished (1999)
COMMENT On Jun 10, 2003 this sequence version replaced gi:31585601.
 Contact: Daniela S. Gerhard, Ph.D.
 Office of Cancer Genomics
 National Cancer Institute / NIH
 Bldg. 31 Rm10A07 Bethesda, MD 20892
 Email: cgapbs-r@mail.nih.gov
 Tissue Procurement: Narayan Bhat
 cDNA Library Preparation: Bhat Laboratory
 cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
 DNA Sequencing by: Agencourt Bioscience Corporation
 Clone distribution: MGC clone distribution information can be
 found through the I.M.A.G.E. Consortium/LLNL at:
 http://image.llnl.gov
 Plate: IRBKl row:g column: 10
 High quality sequence start: 14
 High quality sequence stop: 492.

FEATURES Location/Qualifiers
source 1..492
 /organism="Homo sapiens"
 /mol_type="mRNA"
 /db_xref="taxon:9606"
 /clone="IMAGE:6971771"
 /tissue_type="mixed"
 /lab_host="DH5A (T1 phage-resistant)"
 /clone_lib="NIH_MGC_195"
 /note="Vector:pDNR-Dual; Site 1; loxP-SalI; Site 2:
 loxP-HindIII; Clones from this library have been
 PCR-amplified using gene-specific primers to contain the
 complete open reading frame (based on known gene sequences
 available from NCBI's RefSeq). Template for PCR is cDNA
 derived from either pooled total cytoplasmic polyA RNA from 30
 cells lines or pooled total RNA from 10 different tissues
 (from BD Biosciences/Clontech and Washington University).
 PCR products are directionally cloned into the loxP sites
 of the pDNR-Dual vector. Library constructed by Dr.
 Narayan Bhat, Earl Bere III and Hongling Liao (Gene
 Expression Laboratory, Research Technology Program, SAIC
 Frederick, NCI-Frederick, Frederick, MD 21702). For
 information on which gene each clone represents, please
 visit our anonymous ftp site at
 ftp://image.llnl.gov/image/rearrayed_plates/IRBK.presV.dat

RESULT 14
CD559536

```
LOCUS       CD559536                 489 bp    mRNA    linear   EST 26-NOV-2003
DEFINITION  AGENCOURT 14496804 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971768 5', mRNA sequence.
ACCESSION   CD559536
VERSION     CD559536.2  GI:38558953
KEYWORDS    EST.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 489)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE     National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
  COMMENT   On Jun 10, 2003 this sequence version replaced gi:31585604.
            Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBK1  row: g  column: 07
            High quality sequence start: 17
            High quality sequence stop: 489.
FEATURES             Location/Qualifiers
     source          1..489
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971768"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
                     PCR-amplified using gene-specific primers to contain the
                     complete open reading frame (based on known gene sequences
                     available from NCBI's RefSeq). Template for PCR is cDNA
                     derived from either pooled cytoplasmic polyA RNA from 30
                     cells lines or pooled total RNA from 10 different tissues
                     (from BD Biosciences/Clontech and Washington University).
```

ORIGIN

```
Query Match       6.9%;  Score 114.4; DB 6; Length 492;
Best Local Similarity   75.5%;  Pred. No. 6.1e-13;
Matches 142;  Conservative  0; Mismatches 46; Indels 0; Gaps 0;
```

a Note: this is a NIH_MGC Library."

```
Qy      4 CAAACACTGAACACATTTCAGGAGCTATGAGAAGTGCTTCTGAATTTGAGTTTGCTTG 63
          ||||||||||||||||||| ||||||||| ||| || ||||||| |||||||||||||
Db     33 CAAAGCGACGAAACGTTTCAGGAGCCATGAGGAGGATGCTTCTGCATTTGAGTTTGCTTG 92

Qy     64 GGGCTGCCTATGTTTCTGCCTTTGCTGTGTAGAAAAATCCATGAATAGACTGGTGGGCAGAGA 123
          ||||||||| || ||||| |  |||| || ||| |||| |||| || |||| |||| |||||
Db     93 GAGCTGCCTACGTGTATGCCATCCCCACAGAAATTCCCACAAGTGCATTGGTGAAAGAGA 152

Qy    124 CCTTGACACTGCTCTCCACTCATCGAACTTGGCTGTGATAGGCGGATGGGGGTAATTTTCTTT 183
          ||||| |||||| || | |||||||||||| |||| ||||| || ||| ||||| |
Db    153 CCTTGGCCACTGCCTTTCTACTCATCGAACTCTGCTGATAGCCAATGAGACTCTGAGGATTC 212

Qy    184 TGATTCCT 191
          |  |||||
Db    213 CTGTTCCT 220
```

RESULT 15
CD559686/c

```
LOCUS       CD559686                 456 bp    mRNA    linear   EST 11-JUN-2003
DEFINITION  AGENCOURT 14497093 NIH_MGC_195 Homo sapiens cDNA clone
            IMAGE:6971772 3', mRNA sequence.
ACCESSION   CD559686
VERSION     CD559686.1  GI:31585754
KEYWORDS    EST.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 456)
  AUTHORS   NIH-MGC http://mgc.nci.nih.gov/.
  TITLE     National Institutes of Health, Mammalian Gene Collection (MGC)
  JOURNAL   Unpublished (1999)
  COMMENT   Contact: Daniela S. Gerhard, Ph.D.
            Office of Cancer Genomics
            National Cancer Institute / NIH
            Bldg. 31 Rm10A07 Bethesda, MD 20892
            Email: cgapbs-r@mail.nih.gov
            Tissue Procurement: Narayan Bhat
            cDNA Library Preparation: Bhat Laboratory
            cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
            DNA Sequencing by: Agencourt Bioscience Corporation
            Clone distribution: MGC clone distribution information can be
            found through the I.M.A.G.E. Consortium/LLNL at:
            http://image.llnl.gov
            Plate: IRBK1  row: g  column: 11
            High quality sequence stop: 456.
FEATURES             Location/Qualifiers
     source          1..456
                     /organism="Homo sapiens"
                     /mol_type="mRNA"
                     /db_xref="taxon:9606"
                     /clone="IMAGE:6971772"
                     /tissue_type="mixed"
                     /lab_host="DH5A (T1 phage-resistant)"
                     /clone_lib="NIH_MGC_195"
                     /note="Vector: pDNR-Dual; Site_1: loxP-SalI; Site_2:
                     loxP-HindIII; Clones from this library have been
```

ORIGIN

```
Query Match       6.8%;  Score 113.2; DB 6; Length 489;
Best Local Similarity   74.7%;  Pred. No. 1.1e-12;
Matches 142;  Conservative  0; Mismatches 48; Indels 0; Gaps 0;
```

a Note: this is a NIH_MGC Library."

```
Qy      2 GGCAAACACTGAACACATTTCAGGAGCTATGAGAAGATGCTTCTGAATTTGAGTTTGCTTAGCTCT 61
          |  ||||||||||||||||||| ||||||||| ||||||||||| |||||||||||||| ||||||
Db     29 GACCAAGCGACGAAACGTTTCAGGAGCCATGAGGAGGATGCTTCTGCATTTGAGTTTGCTAGCTCT 88

Qy     62 TGGGGCTGCCTATGTTTCTGCCTTTGCTGTGTAGAAAATCCATGAATAGACTGGTGGGCAGA 121
          |||| ||||||||| || ||||| |  |||| || ||| |||| || |||| |||| |||||
Db     89 TGGGAGCTGCCTACGTGTATGCCATCCCCACAGAAATTCCCACAAGTGCATTGGTGAAAGA 148

Qy    122 GACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGGGTAATTTTCTT 181
          ||||||| |||||| || | |||||||||||| ||| ||||| || |||  |||| |
Db    149 GACCTTGGCCACTGCCTTTCTACTCATCGAACTCTGCTGATAGCCAATAGGGACTCTGAGGAT 208

Qy    182 TTTGATCCT 191
          | | |||||
Db    209 TCCTGTTCCT 218
```

PCR-amplified using gene-specific primers to contain the
complete open reading frame (based on known gene sequences
available from NCBI's RefSeq). Template for PCR is cDNA
derived from either pooled cytoplasmic polyA RNA from 30
cells lines or pooled total RNA from 10 different tissues
(from BD Biosciences/Clontech and Washington University).
PCR products are directionally cloned into the loxP sites
of the pDNR-Dual vector. Library constructed by Dr.
Narayan Bhat, Earl Bere III and Hongling Liao (Gene
Expression Laboratory, Research Technology Program, SAIC
Frederick, NCI-Frederick, Frederick, MD 21702). For
information on which gene each clone represents, please
visit our anonymous ftp site at
ftp://image.llnl.gov/image/rearrayed_plates/IRBK.preSV.dat
a Note: this is a NIH_MGC Library."

ORIGIN

Query Match   6.7%;   Score 111.2; DB 6;   Length 456;
Best Local Similarity   74.5%;   Pred. No. 2.7e-12;
Matches 140; Conservative   0; Mismatches 48; Indels   0; Gaps   0;

```
Qy       4 CAAACACTGAACATTTCAGAGCTATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTG 63
           | ||| ||| ||  | |||| ||| || || || ||| ||||| ||| ||||||||||||||
Db     456 CCAAAGCAGAAACGTTTCAGAGCCATGAGGAATGCTTCTGCATTTGAGTTTGCTAGCTCTTG 397

Qy      64 GGGCTGCCTATGTTTCTGCCTTTGCTGTGTAGAAAAATCCCATGAATAGACTGGTGGCCAGAGA 123
           | ||||||| || ||| ||| ||| || | | |||||| |||||  |||| |||| | ||||||
Db     396 GAGCTGCCTACGTGTATGCCATCCCCACAGAAAATTCCCACAAGTGCATTGGTGAAAGAGA 337

Qy     124 CCTTGACACTGCTCTCCACTCATCATCGAAACTTGGGCTTGGGATAGGCGATGGGGGGGTAATTTCTTTT 183
           ||||| |||||| ||||  ||| |||||||| || |||| || |||| | |||| | || | |||||||||
Db     336 CCTTGGCACTGCTTTCTACCATCATCGAACTCTGCTGATAGCCAATGAGACTCTGAGGATTC 277

Qy     184 TGATTCCT 191
           || |||||
Db     276 CTGTTCCT 269
```

Search completed: August   8, 2005, 08:46:11
Job time : 7058.44 secs

```
                                        GenCore version 5.1.6
                                        Copyright (c) 1993 - 2005 Compugen Ltd.

OM nucleic - nucleic search, using sw model

Run on:         August  8, 2005, 13:33:24 ; Search time 2938.12 Seconds
                                           (without alignments)
                                           10060.080 Million cell updates/sec

Title:          US-10-787-382-4
Perfect score:  610
Sequence:       1 caaggcaaacactgaacatt..........acagatgaaatatattgag 610

Scoring table:  OLIGO_NUC
                Gapop 60.0 , Gapext 60.0
Searched:       4708233 seqs, 2422760795 residues
Word size :     0

Total number of hits satisfying chosen parameters:        9416466

Minimum DB seq length: 0
Maximum DB seq length: 200000000000

Post-processing: Listing first 45 summaries

Database :     GenEmbl:*
               1: gb_ba:*
               2: gb_htg:*
               3: gb_in:*
               4: gb_om:*
               5: gb_ov:*
               6: gb_pat:*
               7: gb_ph:*
               8: gb_pl:*
               9: gb_pr:*
              10: gb_ro:*
              11: gb_sts:*
              12: gb_sy:*
              13: gb_un:*
              14: gb_vi:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.
```

SUMMARIES

```
Result         Query                                %
No.    Score   Match  Length  DB   ID        DB   ID        Description
-----  -----   -----  ------  --   --        --   --        -----------
  1    610     100.0   610    4    AF331919  AF331919  Canis fam
  2    610     100.0   610    6    BD211558  BD211558  Canine an
  3    610     100.0   610    6    BD211559  BD211559  Canine an
  4    610     100.0   610    6    AR241536  AR241536  Sequence
  5    610     100.0   610    6    AR241537  AR241537  Sequence
  6    610     100.0   610    6    AR254492  AR254492  Sequence
  7    610     100.0   610    6    AR254493  AR254493  Sequence
  8    610     100.0   610    6    BD211560  BD211560  Canine an
  9    610     100.0   610    6    BD211561  BD211561  Canine an
 10    402     65.9    402    6    AR241538  AR241538  Sequence
 11    402     65.9    402    6    AR241539  AR241539  Sequence
 12    402     65.9    402    6    AR254494  AR254494  Sequence
 13    402     65.9    402    6    AR254495  AR254495  Sequence
 14    393     64.4    405    6    AX300436  AX300436  Sequence
 15    393     64.4    405    6    AX083939  AX083939  Sequence
 16    345     56.6    345    6    BD211562  BD211562  Canine an
 17    345     56.6    345    6    BD211563  BD211563  Canine an
 18    345     56.6    345    6    AR241540  AR241540  Sequence
 19    345     56.6    345    6    AR241541  AR241541  Sequence
 20    345     56.6    345    6    AR254496  AR254496  Sequence
 21    345     56.6    345    6    AR254497  AR254497  Sequence
 22    271     44.4    356    4    AF091133  AF091133  Canis fam
 23    250     41.0    343    6    AX083948  AX083948  Sequence
 24    170     27.9   1658    4    AF331920  AF331920  Canis fam
 25    43      7.0     520    4    OAU35038  U35038    Ovis aries
 26    43      7.0    1140    4    OAILV1    OAILV1    Ovis aries
 27    42      6.9     405    4    SSC010088 U17052    Sus scrof
 28    42      6.9     529    4    SSC133452 AJ010088  Sus scrof
 29    41      6.7     405    4    AF068770  AJ133452  Felis cat
 30    41      6.7     405    4    BTINTLEU5 AF068770  B.taurus mR
 31    41      6.7     838    4    AF025436  Z67872    Felis cat
 32    41      6.7   197131    4    AF149665  AF025436  Bos tauru
 33    40      6.6     405    4    ECU91947  AF149665  Equus caba
 34    30      4.9     354    4    AF051372  U91947    Felis cat
 35    29      4.8   213042    4    AC151015  AF051372  Callithri
 36    28      4.6     405    9    AF294756  AC151015  Saimiri s
 37    28      4.6     564   10    CPU34588  AF294756  Cavia porc
 38    25      4.1   150124    2    AC148886  U34588    Otolemur
 39    25      4.1   167036    2    AC148855  AC148886  Otolemur
 40    22      3.6     405    6    I39768    AC148855  
 41    22      3.6     27     6    BD211604  I39768    Canine an
 42    22      3.6     32     6    AR241582  BD211604  Sequence
 43    22      3.6     32     6    AR254538  AR241582  Sequence
 44    22      3.6     47     6    I71456    AR254538  
 45    22      3.6     405    9    CEYIN5A   L26033    Cercocebus
```

ALIGNMENTS

```
RESULT 1
AF331919
LOCUS       AF331919                  610 bp    mRNA    linear   MAM 04-OCT-2001
DEFINITION  Canis familiaris interleukin-5 mRNA, complete cds.
ACCESSION   AF331919
VERSION     AF331919.1  GI:15919180
KEYWORDS    .
SOURCE      Canis familiaris (dog)
  ORGANISM  Canis familiaris
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1  (bases 1 to 610)
  AUTHORS   Yang,S., Sellins,K.S., Weber,B. and McCall,C.
  TITLE     Canine interleukin-5: molecular characterization of the gene and
            expression of biologically active recombinant protein
  JOURNAL   J. Interferon Cytokine Res. 21 (6), 361-367 (2001)
  MEDLINE   21334408
  PUBMED    11440633
REFERENCE   2  (bases 1 to 610)
  AUTHORS   Yang,S.
  TITLE     Direct Submission
  JOURNAL   Submitted (22-DEC-2000) Immunology, Heska Corporation, 1613
            Prospect Parkway, Ft Collins, CO 80525, USA
FEATURES             Location/Qualifiers
     source          1..610
                     /organism="Canis familiaris"
                     /mol_type="mRNA"
                     /db_xref="taxon:9615"
     5'UTR           1..28
     CDS             29..433
                     /note="IL-5"
                     /codon_start=1
                     /product="interleukin-5"
                     /protein_id="AAL10715.1"
                     /db_xref="GI:15919181"
                     /translation="MRMLLNLSLLALGAAYSAFAVENPMNRLVAETLTLLSTHRTWL
                     IGDGNLMIPPTENKNHQLCIKEVFQGIDTLKNQTAHGEAVDKLFQNLSLIKEHIERQK
                     KRCAGERWRVTKFLDYLQVFLGVINTEWTPES"
     3'UTR           433..610
ORIGIN
```

```
       Query Match    100.0%; Score 610; DB 4; Length 610;
```

RESULT 2

BD211558

```
LOCUS      BD211558        610 bp    DNA    linear   PAT 17-JUL-2003
DEFINITION Canine and feline immunoregulatory proteins, nucleic acid molecules
           and method of using the same.
ACCESSION  BD211558
VERSION    BD211558.1  GI:33021328
KEYWORDS   JP 2002516104-A/64.
SOURCE     Canis familiaris (dog)
  ORGANISM Canis familiaris
           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
           Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE  1  (bases 1 to 610)
  AUTHORS  Sim,G.; Yang,S.; Dreitz,M.J. and Wonderling,R.S.
  TITLE    Canine and feline immunoregulatory proteins, nucleic acid molecules
           and method of using the same
  JOURNAL  Patent: JP 2002516104-A 64 04-JUN-2002;
           HESKA CORP
  OS       Canis familiaris (dog)
  PN       JP 2002516104-A/64
  PD       04-JUN-2002
  PF       28-MAY-1999 JP 2000551002
  PR       29-MAY-1998 US 60/087306
  PI       GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
           C12N15/09,A61K1/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
COMMENT
```

FEATURES   Location/Qualifiers

```
PC         A61K39/395,
PC         A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,C07K14/535,
PC         C07K14/56,C07K14/54,
PC         C07K14/705,C07K16/24,C07K16/28,C12N1/21,C12N5/10,  PC
           G01N33/15,
PC         G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC     Canine
           and feline immunoregulatory proteins, nucleic acid  CC
           molecules and
CC         method of using the same
FH         Key             Location/Qualifiers
FT     source          (29)..(430).
FT     CDS             1..610
                       /organism="Canis familiaris"
                       /mol_type="genomic DNA"
                       /db_xref="taxon:9615"
ORIGIN
```

Query Match   100.0%;   Score 610;   DB 6;   Length 610;
Best Local Similarity 100.0%;   Pred. No. 0;   Mismatches 0;   Indels 0;   Gaps 0;
Matches 610; Conservative 0;

```
Qy    1  CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC   60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1  CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC   60

Qy   61  TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC  120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61  TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC  120

Qy  121  AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGGCTGCATAGGCGATGGGAACCTGAT  180
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  121  AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGGCTGCATAGGCGATGGGAACCTGAT  180

Qy  181  GATTCCTACTCCTGAAAATAAAAAATCACCAACTGTTCATTAAAGAAGTTTTTCAGGGTAT  240
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  181  GATTCCTACTCCTGAAAATAAAAAATCACCAACTGTTCATTAAAGAAGTTTTTCAGGGTAT  240

Qy  241  AGAGCACATTGAAGAACCAAAACTGCCCACGGGGGAGGCTGTGGATAAACTATTCCAAAACTT  300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  241  AGAGCACATTGAAGAACCAAAACTGCCCACGGGGGAGGCTGTGGATAAACTATTCCAAAACTT  300

Qy  301  GTCTTTAATAAAAGAACACATAGAGGCGCCAAAAAAAAGGTTGTCGAAGGAGAAAGATGGAG  360
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  301  GTCTTTAATAAAAGAACACATAGAGGCGCCAAAAAAAAGGTTGTCGAAGGAGAAAGATGGAG  360

Qy  361  AGTGACAAAAGTTCCTAGACTACCTGCAAGTATTCTTGGTGTAATAAACACCGAGTGGAC  420
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  361  AGTGACAAAAGTTCCTAGACTACCTGCAAGTATTCTTGGTGTAATAAACACCGAGTGGAC  420

Qy  421  ACCGGAAAAGTTGAGGAACAAAACCGGCTTATTGTAGTGGAAGATTTTGGAGAAGAATGGTTT  480
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  421  ACCGGAAAAGTTGAGGAACAAAACCGGCTTATTGTAGTGGAAGATTTTGGAGAAGAATGGTTT  480

Qy  481  TTTGGCGATGAGAATGAGGGGCCAACCAAACAGTAGGGACTTAATGGCCAGTATAACTAAGC  540
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  481  TTTGGCGATGAGAATGAGGGGCCAACCAAACAGTAGGGACTTAATGGCCAGTATAACTAAGC  540

Qy  541  TTCAGAGACAAAGTAAAATATTTCAGGCATCCTACTTATCACTTCACACAGATGAAA  600
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db  541  TTCAGAGACAAAGTAAAATATTTCAGGCATCCTACTTATCACTTCACACAGATGAAA  600

Qy  601  TATATTTGAG  610
         ||||||||||
Db  601  TATATTTGAG  610
```

RESULT 3

BD211559/c

```
LOCUS      BD211559        610 bp    DNA    linear   PAT 17-JUL-2003
DEFINITION Canine and feline immunoregulatory proteins, nucleic acid molecules
           and method of using the same.
ACCESSION  BD211559
```

Best Local Similarity 100.0%;   Pred. No. 0;   Mismatches 0;   Indels 0;   Gaps 0;
Matches 610; Conservative 0;

```
Qy    1  CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC   60
Db    1  CAAGGCAAACACTGAACATTTCAGAGCTATGAGAATGCTTCTGAATTTGAGTTTGCTAGC   60
Qy   61  TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC  120
Db   61  TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC  120
Qy  121  AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGGCTGCATAGGCGATGGGAACCTGAT  180
Db  121  AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGGCTGCATAGGCGATGGGAACCTGAT  180
Qy  181  GATTCCTACTCCTGAAAATAAAAAATCACCAACTGTTCATTAAAGAAGTTTTTCAGGGTAT  240
Db  181  GATTCCTACTCCTGAAAATAAAAAATCACCAACTGTTCATTAAAGAAGTTTTTCAGGGTAT  240
Qy  241  AGAGCACATTGAAGAACCAAAACTGCCCACGGGGGAGGCTGTGGATAAACTATTCCAAAACTT  300
Db  241  AGAGCACATTGAAGAACCAAAACTGCCCACGGGGGAGGCTGTGGATAAACTATTCCAAAACTT  300
Qy  301  GTCTTTAATAAAAGAACACATAGAGGCGCCAAAAAAAAGGTTGTCGAAGGAGAAAGATGGAG  360
Db  301  GTCTTTAATAAAAGAACACATAGAGGCGCCAAAAAAAAGGTTGTCGAAGGAGAAAGATGGAG  360
Qy  361  AGTGACAAAAGTTCCTAGACTACCTGCAAGTATTCTTGGTGTAATAAACACCGAGTGGAC  420
Db  361  AGTGACAAAAGTTCCTAGACTACCTGCAAGTATTCTTGGTGTAATAAACACCGAGTGGAC  420
Qy  421  ACCGGAAAAGTTGAGGAACAAAACCGGCTTATTGTAGTGGAAGATTTTGGAGAAGAATGGTTT  480
Db  421  ACCGGAAAAGTTGAGGAACAAAACCGGCTTATTGTAGTGGAAGATTTTGGAGAAGAATGGTTT  480
Qy  481  TTTGGCGATGAGAATGAGGGGCCAACCAAACAGTAGGGACTTAATGGCCAGTATAACTAAGC  540
Db  481  TTTGGCGATGAGAATGAGGGGCCAACCAAACAGTAGGGACTTAATGGCCAGTATAACTAAGC  540
Qy  541  TTCAGAGACAAAGTAAAATATTTCAGGCATCCTACTTATCACTTCACACAGATGAAA  600
Db  541  TTCAGAGACAAAGTAAAATATTTCAGGCATCCTACTTATCACTTCACACAGATGAAA  600
Qy  601  TATATTTGAG  610
Db  601  TATATTTGAG  610
```

VERSION   BD211559.1 GI:33021329
KEYWORDS   JP 2005516104-A/65.
SOURCE   Canis familiaris
ORGANISM   Canis familiaris (dog)
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1 (bases 1 to 610)
AUTHORS   Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
TITLE   Canine and feline immunoregulatory proteins, nucleic acid molecules
            and method of using the same
JOURNAL   Patent: JP 2005516104-A 65 04-JUN-2002;
            HESKA CORP
COMMENT   Canis familiaris (dog)
PN   JP 2005516104-A/65
PD   04-JUN-2002
PF   28-MAY-1999 JP 200551610104-A/65
PR   29-MAY-1998 US 60/087306
PI   GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
            C12N15/09,A61K31/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
PC   A61K39/395,
PC   A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,C07K14/535,
PC   C07K14/54,
PC   C07K14/56,C07K14/705,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
            G01N33/15,
PC   G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC   Canine
            and feline immunoregulatory proteins, nucleic acid CC
            molecules and
            method of using the same
FH   Key   Location/Qualifiers
FT   source   1..610
FT   /organism='Canis familiaris (dog)'.
FEATURES   Location/Qualifiers
     source   1..610
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9615"
ORIGIN

Query Match   100.0%;   Score 610; DB-6;   Length 610;
Best Local Similarity   100.0%;   Pred. No. 0;
Matches 610; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAAGTGCTTCTGAAATTTGAGTTTGCTAGC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   610 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAAGTGCTTCTGAAATTTGAGTTTGCTAGC 551

Qy   61 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC 120
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   550 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC 491

Qy   121 AGAGACCTTGACACTGCTCTCTCCACTCATCGAACTTGGCTGATAGGCCGATGGGAACCTGAT 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   490 AGAGACCTTGACACTGCTCTCTCCACTCATCGAACTTGGCTGATAGGCCGATGGGAACCTGAT 431

Qy   181 GATTCCTACTCCCTGAAAATAAAAATCACCAACTGTCGCATTAAAGAAGAGTTTTTCAGGGTAT 240
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   430 GATTCCTACTCCCTGAAAATAAAAATCACCAACTGTCGCATTAAAGAAGAGTTTTTCAGGGTAT 371

Qy   241 AGACACATTGAAGAACCAAACTGCCCACGGGGGGAGGCGTGTGGATAAACTATTCCAAAACTT 300
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   370 AGACACATTGAAGAACCAAACTGCCCACGGGGGGAGGCGTGTGGATAAACTATTCCAAAACTT 311

Qy   301 GTCTTTAATAAAAGAAGAGAGCGCCCAAAAAAAAAAAAAAGGGTGTGCAGGAGAAAGATGGAG 360
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   310 GTCTTTAATAAAAGAAGAGAGCGCCCAAAAAAAAAAAAAAGGGTGTGCAGGAGAAAGATGGAG 251

Qy   361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTTCTTGGTGTAATAAACACCGAGTGGAC 420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   250 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTTCTTGGTGTAATAAACACCGAGTGGAC 191

Qy   421 ACCGGAAAGTTGAGAACAAACCGGCTTATTGTAGTGGGAAGAATTTTGGAGAAGAATGGTTT 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   190 ACCGGAAAGTTGAGAACAAACCGGCTTATTGTAGTGGGAAGAATTTTGGAGAAGAATGGTTT 131

Db   601 TATATTTGAG 610
         ||||||||||
Db   10 TATATTTGAG 1

RESULT 4
LOCUS   AR241536   610 bp   DNA   linear   PAT 20-DEC-2002
DEFINITION Sequence 80 from patent US 6471957.
ACCESSION   AR241536
VERSION   AR241536.1 GI:27287245
KEYWORDS   .
SOURCE   Unknown.
ORGANISM   Unclassified.
            Unknown.
REFERENCE   1 (bases 1 to 610)
AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
TITLE   Canine IL-4 immunoregulatory proteins and uses thereof
JOURNAL   Patent: US 6471957-A 80 29-OCT-2002;
FEATURES   Location/Qualifiers
     source   1..610
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match   100.0%;   Score 610; DB-6;   Length 610;
Best Local Similarity   100.0%;   Pred. No. 0;
Matches 610; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAAGTGCTTCTGAAATTTGAGTTTGCTAGC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 CAAGGCAAACACTGAACATTTCAGAGCTATGAGAAGTGCTTCTGAAATTTGAGTTTGCTAGC 60

Qy   61 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC 120
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 TCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTAGAAAATCCCATGAATAGACTGGTGGC 120

Qy   121 AGAGACCTTGACACTGCTCTCTCCACTCATCGAACTTGGCTGATAGGCCGATGGGAACCTGAT 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 AGAGACCTTGACACTGCTCTCTCCACTCATCGAACTTGGCTGATAGGCCGATGGGAACCTGAT 180

Qy   181 GATTCCTACTCCCTGAAAATAAAAATCACCAACTGTCGCATTAAAGAAGAGTTTTTCAGGGTAT 240
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 GATTCCTACTCCCTGAAAATAAAAATCACCAACTGTCGCATTAAAGAAGAGTTTTTCAGGGTAT 240

Qy   241 AGACACATTGAAGAACCAAACTGCCCACGGGGGGAGGCGTGTGGATAAACTATTCCAAAACTT 300
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 AGACACATTGAAGAACCAAACTGCCCACGGGGGGAGGCGTGTGGATAAACTATTCCAAAACTT 300

Qy   301 GTCTTTAATAAAAGAAGAGAGCGCCCAAAAAAAAAAAAAAGGGTGTGCAGGAGAAAGATGGAG 360
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   301 GTCTTTAATAAAAGAAGAGAGCGCCCAAAAAAAAAAAAAAGGGTGTGCAGGAGAAAGATGGAG 360

Qy   361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTTCTTGGTGTAATAAACACCGAGTGGAC 420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTTCTTGGTGTAATAAACACCGAGTGGAC 420

Qy   421 ACCGGAAAGTTGAGAACAAACCGGCTTATTGTAGTGGGAAGAATTTTGGAGAAGAATGGTTT 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   421 ACCGGAAAGTTGAGAACAAACCGGCTTATTGTAGTGGGAAGAATTTTGGAGAAGAATGGTTT 480

Qy   481 TTTGGCGATGAGAATGAGGGGCCAACCAACAGTAGGGGACTTAATGCCCAGTATAAACTAAGC 540
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   481 TTTGGCGATGAGAATGAGGGGCCAACCAACAGTAGGGGACTTAATGCCCAGTATAAACTAAGC 540

```
Qy    541 TTCAGAGACAAAAGTAAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    541 TTCAGAGACAAAAGTAAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600

Qy    601 TATATTTGAG 610
          ||||||||||
Db    601 TATATTTGAG 610
```

RESULT 5

```
LOCUS       AR241537/c
DEFINITION  Sequence 82 from patent US 6471957.
ACCESSION   AR241537
VERSION     AR241537.1  GI:27287246
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 610)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Canine IL-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 82 29-OCT-2002;
FEATURES             Location/Qualifiers
     source          1..610
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match   100.0%;  Score 610;  DB 6;  Length 610;
Best Local Similarity   100.0%;  Pred. No. 0;  Mismatches 0;  Indels 0;  Gaps 0;
Matches 610;  Conservative 0;
```

LOCUS AR241537 610 bp DNA linear PAT 20-DEC-2002

```
Qy      1 CAAGGCAAAACAACTGAACATTTCAGAGAGCTATGAGAATGCTTCTGAAATTGAGTTGCTAGC 60
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    610 CAAGGCAAAACAACTGAACATTTCAGAGAGCTATGAGAATGCTTCTGAAATTGAGTTGCTAGC 551

Qy     61 TCTTGGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAAATCCCATGAATTGGTGGC 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    550 TCTTGGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAAATCCCATGAATTGGTGGC 491

Qy    121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGAT 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    490 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGAT 431

Qy    181 GATTCCTACTCCTGAAAAATAAAAAATCACCAACTGTGCCATTAAAAGAAGTTTTTCAGGGTAT 240
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    430 GATTCCTACTCCTGAAAAATAAAAAATCACCAACTGTGCCATTAAAAGAAGTTTTTCAGGGTAT 371

Qy    241 AGACACATTGAAGAACCAAAACTGCCCACGCGGGGAGGCGTGTGGATAAACTATTCCAAAACTT 300
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    370 AGACACATTGAAGAACCAAAACTGCCCACGCGGGGAGGCGTGTGGATAAACTATTCCAAAACTT 311

Qy    301 GTCTTTAATAAAGAACACATAGAGGCGCCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    310 GTCTTTAATAAAGAACACATAGAGGCGCCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 251

Qy    361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAAACACCGAGTGGGAC 420
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    250 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAAACACCGAGTGGGAC 191

Qy    421 ACCGGAAAGTTGAGCAACAAACCGGCTTATTGTAGTGGAACAGATTTTGGAAGAGAAATGGTTT 480
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    190 ACCGGAAAGTTGAGCAACAAACCGGCTTATTGTAGTGGAACAGATTTTGGAAGAGAAATGGTTT 131

Qy    481 TTTGGCGGATGAGAATGAGGGCGCCAACCAACAGTAGGGGGACTTAAGTGGCCAGTATAACTAAGC 540
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    130 TTTGGCGGATGAGAATGAGGGCGCCAACCAACAGTAGGGGGACTTAAGTGGCCAGTATAACTAAGC 71

Qy    541 TTCAGAGACAAAAGTAAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     70 TTCAGAGACAAAAGTAAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 11
```

```
Qy    601 TATATTTGAG 610
          ||||||||||
Db     10 TATATTTGAG 1
```

RESULT 6

```
LOCUS       AR254492
DEFINITION  Sequence 80 from patent US 6482403.
ACCESSION   AR254492
VERSION     AR254492.1  GI:27303380
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 610)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Canine IL-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 80 19-NOV-2002;
FEATURES             Location/Qualifiers
     source          1..610
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match   100.0%;  Score 610;  DB 6;  Length 610;
Best Local Similarity   100.0%;  Pred. No. 0;  Mismatches 0;  Indels 0;  Gaps 0;
Matches 610;  Conservative 0;
```

LOCUS AR254492 610 bp DNA linear PAT 20-DEC-2002

```
Qy      1 CAAGGCAAAACAACTGAACATTTCAGAGAGCTATGAGAATGCTTCTGAAATTGAGTTGCTAGC 60
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 CAAGGCAAAACAACTGAACATTTCAGAGAGCTATGAGAATGCTTCTGAAATTGAGTTGCTAGC 60

Qy     61 TCTTGGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAAATCCCATGAATTGGTGGC 120
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 TCTTGGGGGCTGCCTATGTTTCTGCCCTTTGCTGTAGAAAAATCCCATGAATTGGTGGC 120

Qy    121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGAT 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 AGAGACCTTGACACTGCTCTCCACTCATCGAACTTGGCTGATAGGCGGATGGGAACCTGAT 180

Qy    181 GATTCCTACTCCTGAAAAATAAAAAATCACCAACTGTGCCATTAAAAGAAGTTTTTCAGGGTAT 240
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 GATTCCTACTCCTGAAAAATAAAAAATCACCAACTGTGCCATTAAAAGAAGTTTTTCAGGGTAT 240

Qy    241 AGACACATTGAAGAACCAAAACTGCCCACGCGGGGAGGCGTGTGGATAAACTATTCCAAAACTT 300
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 AGACACATTGAAGAACCAAAACTGCCCACGCGGGGAGGCGTGTGGATAAACTATTCCAAAACTT 300

Qy    301 GTCTTTAATAAAGAACACATAGAGGCGCCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 GTCTTTAATAAAGAACACATAGAGGCGCCCAAAAAAAAAAGGTGTGCAGGAGAAAGATGGAG 360

Qy    361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAAACACCGAGTGGGAC 420
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTAATAAAACACCGAGTGGGAC 420

Qy    421 ACCGGAAAGTTGAGCAACAAACCGGCTTATTGTAGTGGAACAGATTTTGGAAGAGAAATGGTTT 480
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    421 ACCGGAAAGTTGAGCAACAAACCGGCTTATTGTAGTGGAACAGATTTTGGAAGAGAAATGGTTT 480

Qy    481 TTTGGCGGATGAGAATGAGGGCGCCAACCAACAGTAGGGGGACTTAAGTGGCCAGTATAACTAAGC 540
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    481 TTTGGCGGATGAGAATGAGGGCGCCAACCAACAGTAGGGGGACTTAAGTGGCCAGTATAACTAAGC 540

Qy    541 TTCAGAGACAAAAGTAAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    541 TTCAGAGACAAAAGTAAAATATTTCAGGCATCCTACTACTTTATCACTTCACACAGATGAAA 600

Qy    601 TATATTTGAG 610
          ||||||||||
Db    601 TATATTTGAG 610
```

RESULT 7

```
LOCUS           AR254493/c
DEFINITION      Sequence 82 from patent US 6482403.
ACCESSION       AR254493
VERSION         AR254493.1  GI:27303381
KEYWORDS        .
SOURCE          Unknown.
  ORGANISM      Unknown.
                Unclassified.
REFERENCE       1  (bases 1 to 610)
  AUTHORS       Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE         Caniney IL-13 immunoregulatory proteins and uses thereof
  JOURNAL       Patent: US 6482403-A 82 19-NOV-2002;
FEATURES             Location/Qualifiers
     source          1..610
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN
```

```
LOCUS           AR254493            610 bp    DNA      linear   PAT 20-DEC-2002
```

Query Match 100.0%; Score 610; DB 6; Length 610;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 610; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy     1 CAAGGCAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTGAGTTGCTAGC 60
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   610 CAAGGCAAACACTGAACACATTTCAGAGCTATGAGAATGCTTCTGAATTGAGTTGCTAGC 551

Qy    61 TCCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTGTGAGAAGACTGGTGGTGGC 120
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   550 TCCTTGGGGCTGCCTATGTTTCTGCCTTTGCTGTGTGAGAAGACTGGTGGTGGC 491

Qy   121 AGAGAGACCTTGACACTGCTCTCCACTCACTCAGAACTTGGCGATGGGAACCTGAT 180
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   490 AGAGAGACCTTGACACTGCTCTCCACTCACTCAGAACTTGGCGATGGGAACCTGAT 431

Qy   181 GATTCCTACTCCCTGAAAATAAAAATCACCAACACTGTGCCATTAAAGAAGTTTTTCAGGGTAT 240
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   430 GATTCCTACTCCCTGAAAATAAAAATCACCAACACTGTGCCATTAAAGAAGTTTTTCAGGGTAT 371

Qy   241 AGACACATTGAAGAACCAAACTGCCCACGGGGAGGCTGTTGTGGATAAACTATTCCAAAACTT 300
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   370 AGACACATTGAAGAACCAAACTGCCCACGGGGAGGCTGTTGTGGATAAACTATTCCAAAACTT 311

Qy   301 GTCTTTAATAAAAGAACACATAGAGCGCCAAAAAAAGGTGTGCGAGGAGAAAGATGGAG 360
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   310 GTCTTTAATAAAAGAACACATAGAGCGCCAAAAAAAGGTGTGCGAGGAGAAAGATGGAG 251

Qy   361 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTTAATAAACACCGAGTGGAC 420
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   250 AGTGACAAAGTTCCTAGACTACCTGCAAGTATTTCTTGGTGTTAATAAACACCGAGTGGAC 191

Qy   421 ACCGGAAAGTTGAGGAACAAAACCGGCTTATTGTAGTGGAAGATTTTTGGGAAGGAAATGGTTT 480
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   190 ACCGGAAAGTTGAGGAACAAAACCGGCTTATTGTAGTGGAAGATTTTTGGGAAGGAAATGGTTT 131

Qy   481 TTTGGCGATCAGATGAATGAGGGGCCAACCAACAGTGAGGGACTTAATGGCCAGTATAACTAAGC 540
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   130 TTTGGCGATCAGATGAATGAGGGGCCAACCAACAGTGAGGGACTTAATGGCCAGTATAACTAAGC 71

Qy   541 TTCAGAGACAAAGTAAATATTTCAGGCATCCTACTTCACACAGATGAAA 600
         |||||||||||||||||||||||||||||||||||||||||||||||||
Db    70 TTCAGAGACAAAGTAAATATTTCAGGCATCCTACTTCACACAGATGAAA 11

Qy   601 TATATTTGAG 610
         ||||||||||
Db    10 TATATTTGAG 1
```

RESULT 8

BD211560

```
LOCUS           BD211560            402 bp    DNA      linear   PAT 17-JUL-2003
DEFINITION      Canine and feline immunoregulatory proteins, nucleic acid molecules
                and method of using the same.
ACCESSION       BD211560
VERSION         BD211560.1  GI:33021330
KEYWORDS        JP 2002516104-A/66.
SOURCE          Canis familiaris (dog)
  ORGANISM      Canis familiaris
                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                Mammalia; Eutheria; Laurasiatheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE       1  (bases 1 to 402)
  AUTHORS       Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE         Canine and feline immunoregulatory proteins, nucleic acid
                molecules and method of using the same
  JOURNAL       Patent: JP 2002516104-A 66 04-JUN-2002;
                HESKA CORP
COMMENT         OS   Canis familiaris (dog)
                PN   JP 2002516104-A/66
                PD   04-JUN-2002
                PF   28-MAY-2002
                PR   29-MAY-1998 US      60/087306
                PI   GEKKEE SIM, SHUMIN YANG, MATTHEW J DREITZ, RAMANI S WONDERLING PC
                PC   C12N15/09, A61K31/7088, A61K38/00, A61K39/00, A61K39/395,
                PC   A61K39/395,
                PC   A61K45/00, A61K48/00, A61P37/02, A61P37/04, C07K14/475, C07K14/535,
                PC   C07K14/54,
                PC   C07K14/56, C07K14/705, C07K16/24, C07K16/28, C12N1/21, C12N5/10, PC
                PC   G01N33/15,
                PC   G01N33/50, C12N15/00, C12N15/00, A61K37/02, A61K37/66, C12N5/00 CC
                     and feline immunoregulatory proteins, nucleic acid CC
                     molecules and
                CC   method of using the same
FEATURES             Location/Qualifiers
     source          1..402
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9615"
ORIGIN
```

Query Match 65.9%; Score 402; DB 6; Length 402;
Best Local Similarity 100.0%; Pred. No. 3.2e-217;
Matches 402; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy    29 ATGAGAATGCTTCTGAATTTGCAGTTGCTAGCTCTTGGGGTCGCCTATGTTTCTGCCTTT 88
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     1 ATGAGAATGCTTCTGAATTTGCAGTTGCTAGCTCTTGGGGTCGCCTATGTTTCTGCCTTT 60

Qy    89 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 148
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy   149 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCCTGAAAAATAAAAATCAC 208
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGATTCCTACTCCCTGAAAAATAAAAATCAC 180

Qy   209 CAACTGTGCCATTAAAGAAGTTTTTCAGGGTATAGACACCATTGAAGAACTGCCCAC 268
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CAACTGTGCCATTAAAGAAGTTTTTCAGGGTATAGACACCATTGAAGAACTGCCCAC 240

Qy   269 GGGGAGGCTGTGGATAAACTATTCCAAAACTGTCTTTAATAAAAGAACACATAGAGCGC 328
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 GGGGAGGCTGTGGATAAACTATTCCAAAACTGTCTTTAATAAAAGAACACATAGAGCGC 300

Qy   329 CAAAAAAAAGGTGTCAGGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCA 388
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCA 360

Qy   389 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCCGGAAAGT 430
         ||||||||||||||||||||||||||||||||||||||||||
Db   361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCCGGAAAGT 402
```

RESULT 9
BD211561
LOCUS   BD211561/c
DEFINITION   Canine and feline immunoregulatory proteins, nucleic acid molecules
             and method of using the same.
ACCESSION   BD211561
VERSION   BD211561.1 GI:33021331
KEYWORDS   JP 2002516104-A/67.
SOURCE   Canis familiaris (dog)
ORGANISM   Canis familiaris
             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
             Mammalia; Eutheria; Laurasiatheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1 (bases 1 to 402)
  AUTHORS   Sim,G., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine and feline immunoregulatory proteins, nucleic acid molecules
             and method of using the same
  JOURNAL   Patent: JP 2002516104-A 67 04-JUN-2002;
             HESKA CORP
COMMENT   Canis familiaris (dog)
     PN   JP 2002516104-A/67
     PD   04-JUN-2002
     PF   28-MAY-1999 JP 2000551002
     PR   29-MAY-1998 US 60/087306
     PI   GEKKEE SIM,SHUMIN YANG,MATTHEW J DREITZ,RAMANI S WONDERLING PC
             C12N15/09,A61K31/7088,A61K38/00,A61K38/21,A61K39/00,A61K39/395,
     PC   A61K39/395,
     PC   A61K45/00,A61K48/00,A61P37/02,A61P37/04,C07K14/475,C07K14/535,
     PC   C07K14/54,
     PC   C07K14/56,C07K14/705,C07K16/24,C07K16/28,C12N1/21,C12N5/10, PC
             G01N33/15,
     PC   G01N33/50,C12N15/00,A61K37/02,A61K37/66,C12N5/00 CC Canine
             and feline immunoregulatory proteins, nucleic acid CC
             molecules and
     CC   method of using the same
FEATURES   Location/Qualifiers
     source   1..402
                     /organism="Canis familiaris"
                     /mol_type="genomic DNA"
                     /db_xref="taxon:9615"
ORIGIN

Query Match   65.9%; Score 402; DB 6; Length 402;
Best Local Similarity   100.0%; Pred. No. 3.2e-217;
Matches   402; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGCTGCCTAGTGTTCTGCCTTT 88
          |||||||||||||||||||||||||||||||||||||||||| ||||||| |||||||||
Db   402 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 343

Qy   89 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 148
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   342 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 283

Qy   149 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTCTGAAAATAAAATCAC 208
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   282 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTCTGAAAATAAAATCAC 223

Qy   209 CAACTGTGCATTAAAGAAGTTTTTCAGGGTTATAGACACATTGAAGAAACCAAAACTGCCCAC 268
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   222 CAACTGTGCATTAAAGAAGTTTTTCAGGGTTATAGACACATTGAAGAAACCAAAACTGCCCAC 163

Qy   269 GGGGAGGCCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACAACATAGAGCGC 328
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   162 GGGGAGGCCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACAACATAGAGCGC 103

Qy   329 CAAAAAAAAAGGTTGTGTCAGGAGAGTGACAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388
          ||||||||||| |||| ||||||||||||||||||||||||||||||||||||||||||||
Db   102 CAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 43

Qy   389 GTATTTCTTGGTGTGTAATAAAACACCCGAGTGGACACCGGAAAGT 430
          ||||||||||||||||||||||||||||||||||||||||||||||
Db   42 GTATTTCTTGGTGTGTAATAAAACACCCGAGTGGACACCGGAAAGT 1

RESULT 10
AR241538
LOCUS   AR241538   402 bp   DNA   linear   PAT 20-DEC-2002
DEFINITION   Sequence 83 from patent US 6471957.
ACCESSION   AR241538
VERSION   AR241538.1 GI:27287247
KEYWORDS   .
SOURCE   Unknown.
ORGANISM   Unknown.
             Unclassified.
REFERENCE   1 (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine IL-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 83 29-OCT-2002;
FEATURES   Location/Qualifiers
     source   1..402
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

Query Match   65.9%; Score 402; DB 6; Length 402;
Best Local Similarity   100.0%; Pred. No. 3.2e-217;
Matches   402; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

Qy   29 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 88
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1 ATGAGAAATGCTTCTGAATTTGAGTTTGCTAGCTCTTGGGGCTGCCTATGTTTCTGCCTTT 60

Qy   89 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 148
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   61 GCTGTAGAAAATCCCATGAATAGACTGGTGGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy   149 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTCTGAAAATAAAATCAC 208
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CGAACTTGGCTGATAGGCGATGGGGAACCTGATGATTCCTACTCCTCTGAAAATAAAATCAC 180

Qy   209 CAACTGTGCATTAAAGAAGTTTTTCAGGGTTATAGACACATTGAAGAAACCAAAACTGCCCAC 268
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CAACTGTGCATTAAAGAAGTTTTTCAGGGTTATAGACACATTGAAGAAACCAAAACTGCCCAC 240

Qy   269 GGGGAGGCCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACAACATAGAGCGC 328
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 GGGGAGGCCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACAACATAGAGCGC 300

Qy   329 CAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAAAAAAAAGGTGTGCAGGAGAGAAAGATGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Qy   389 GTATTTCTTGGTGTGTAATAAAACACCCGAGTGGACACCGGAAAGT 430
          ||||||||||||||||||||||||||||||||||||||||||||||
Db   361 GTATTTCTTGGTGTGTAATAAAACACCCGAGTGGACACCGGAAAGT 402

RESULT 11
AR241539
LOCUS   AR241539/c   402 bp   DNA   linear   PAT 20-DEC-2002
DEFINITION   Sequence 84 from patent US 6471957.
ACCESSION   AR241539
VERSION   AR241539.1 GI:27287248
KEYWORDS   .
SOURCE   Unknown.
ORGANISM   Unknown.
             Unclassified.
REFERENCE   1 (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE   Canine IL-4 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6471957-A 84 29-OCT-2002;

RESULT 12

```
FEATURES            Location/Qualifiers
     source         1..402
                    /organism="unknown"
                    /mol_type="genomic DNA"
ORIGIN

Query Match         65.9%;  Score 402;  DB 6;  Length 402;
Best Local Similarity   100.0%;  Pred. No. 3.2e-217;
Matches  402;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy    29 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTCGCCTATGTTTCTGCCTTT 88
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   402 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTCGCCTATGTTTCTGCCTTT 343

Qy    89 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 148
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   342 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 283

Qy   149 CGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAATCAC 208
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   282 CGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAATCAC 223

Qy   209 CAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGACACATTGAAGAAGAACCAAAACTGCCCAC 268
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   222 CAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGACACATTGAAGAAGAACCAAAACTGCCCAC 163

Qy   269 GGGGAGGCGTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 328
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   162 GGGGAGGCGTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 103

Qy   329 CAAAAAAAAGGTGTGCAGAGAGAGATGGAGAGTGAGAAGTTCCTAGACTACCTGCAA 388
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   102 CAAAAAAAAGGTGTGCAGAGAGAGATGGAGAGTGAGAAGTTCCTAGACTACCTGCAA 43

Qy   389 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 430
         ||||||||||||||||||||||||||||||||||||||||||
Db    42 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 1
```

RESULT 13

```
LOCUS       AR254494
AR254494
LOCUS       AR254494           402 bp    DNA    linear   PAT 20-DEC-2002
DEFINITION  Sequence 83 from patent US 6482403.
ACCESSION   AR254494
VERSION     AR254494.1  GI:27303382
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Caniney Il-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 83 19-NOV-2002;
FEATURES            Location/Qualifiers
     source         1..402
                    /organism="unknown"
                    /mol_type="genomic DNA"
ORIGIN

Query Match         65.9%;  Score 402;  DB 6;  Length 402;
Best Local Similarity   100.0%;  Pred. No. 3.2e-217;
Matches  402;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy    29 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTCGCCTATGTTTCTGCCTTT 88
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     1 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTCGCCTATGTTTCTGCCTTT 60

Qy    89 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 148
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    61 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy   149 CGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAATCAC 208
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   121 CGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAATCAC 180

Qy   209 CAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGACACATTGAAGAAGAACCAAAACTGCCCAC 268
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   181 CAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGACACATTGAAGAAGAACCAAAACTGCCCAC 240

Qy   269 GGGGAGGCGTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 328
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   241 GGGGAGGCGTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300

Qy   329 CAAAAAAAAGGTGTGCAGAGAGAGATGGAGAGTGAGAAGTTCCTAGACTACCTGCAA 388
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   301 CAAAAAAAAGGTGTGCAGAGAGAGATGGAGAGTGAGAAGTTCCTAGACTACCTGCAA 360

Qy   389 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 430
         ||||||||||||||||||||||||||||||||||||||||||
Db   361 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 402
```

RESULT 13/c

```
LOCUS       AR254495
AR254495
LOCUS       AR254495           402 bp    DNA    linear   PAT 20-DEC-2002
DEFINITION  Sequence 84 from patent US 6482403.
ACCESSION   AR254495
VERSION     AR254495.1  GI:27303383
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 402)
  AUTHORS   Sim,G.-K., Yang,S., Dreitz,M.J. and Wonderling,R.S.
  TITLE     Caniney Il-13 immunoregulatory proteins and uses thereof
  JOURNAL   Patent: US 6482403-A 84 19-NOV-2002;
FEATURES            Location/Qualifiers
     source         1..402
                    /organism="unknown"
                    /mol_type="genomic DNA"
ORIGIN

Query Match         65.9%;  Score 402;  DB 6;  Length 402;
Best Local Similarity   100.0%;  Pred. No. 3.2e-217;
Matches  402;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy    29 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTCGCCTATGTTTCTGCCTTT 88
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   402 ATGAGAAATGCTTCTGAAATTTGAGTTTGCTAGCTCTTGGGGCTCGCCTATGTTTCTGCCTTT 343

Qy    89 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 148
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   342 GCTGTAGAAAATCCCATGAATAGACTGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 283

Qy   149 CGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAATCAC 208
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   282 CGAACTTGGCTGATAGGCGATGGGAACCTGATGAATTCCTACTCCTGAAAATAAAAATCAC 223

Qy   209 CAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGACACATTGAAGAAGAACCAAAACTGCCCAC 268
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   222 CAACTGTGCATTAAAGAAGTTTTTTCAGGGTATAGACACATTGAAGAAGAACCAAAACTGCCCAC 163

Qy   269 GGGGAGGCGTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 328
         |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   162 GGGGAGGCGTGTGGATAAAACTATTCCAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 103

Qy   329 CAAAAAAAAGGTGTGCAGAGAGAGATGGAGAGTGAGAAGTTCCTAGACTACCTGCAA 388
         ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   102 CAAAAAAAAGGTGTGCAGAGAGAGATGGAGAGTGAGAAGTTCCTAGACTACCTGCAA 43

Qy   389 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 430
         ||||||||||||||||||||||||||||||||||||||||||
Db    42 GTATTTCTTGGTGTAATAAACACCGAGTGGACACCGGAAAGT 1
```

RESULT 14

```
AR300436
LOCUS       AR300436                405 bp    DNA     linear   PAT 12-JUN-2003
DEFINITION  Sequence 1 from patent US 6537781.
ACCESSION   AR300436
VERSION     AR300436.1  GI:31687875
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 405)
  AUTHORS   Guo,H., Lawton,R., Mermer,B. and Aiyappa,A.P.
  TITLE     Methods and compositions concerning canine interleukin 5
  JOURNAL   Patent: US 6537781-A 1 25-MAR-2003;
FEATURES             Location/Qualifiers
     source          1..405
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN
```

```
Query Match     64.4%;  Score 393;  DB 6;  Length 405;
Best Local Similarity   100.0%;  Pred. No. 4.4e-212;
Matches  393;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy     29 ATGAGAATGCTTCTGAATTTGAGTTTTGCTAGCTCTTTGGGGGTGCCTATGTTTCTGCCTTT 88
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 ATGAGAATGCTTCTGAATTTGAGTTTTGCTAGCTCTTTGGGGGTGCCTATGTTTCTGCCTTT 60

Qy     89 GCTCGTAGAAAATCCCATGAATAGACTGGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 148
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 GCTCGTAGAAAATCCCATGAATAGACTGGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy    149 CGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 208
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 CGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180

Qy    209 CAACTGTGCATTAAAGAAAGTTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 268
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 CAACTGTGCATTAAAGAAAGTTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240

Qy    269 GGGGGAGGCTGGGATAAAACTATTCCAAAAACTATTCCAAAAACTGTCTTTAATAAAAGAACA CATAGAGCGC 328
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 GGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300

Qy    329 CAAAAAAAAAGGTGTGCAGGAGGAGGAGTGACAAAGTTCCTAGACTACCTGCAA 388
          |||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 CAAAAAAAAAGGTGTGCAGGAGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Qy    389 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACA 421
          |||||||||||||||||||||||||||||||||||
Db    361 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACA 393
```

```
RESULT 15
AX083939
LOCUS       AX083939                405 bp    DNA     linear   PAT 22-JUN-2001
DEFINITION  Sequence 1 from Patent WO0111049.
ACCESSION   AX083939
VERSION     AX083939.2  GI:14532940
KEYWORDS    .
SOURCE      Canis familiaris (dog)
  ORGANISM  Canis familiaris
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
REFERENCE   1
  AUTHORS   Guo,H., Lawton,R., Mermer,B. and Aiyappa,A.P.
  TITLE     Methods and compositions concerning canine interleukin 5
  JOURNAL   Patent: WO 0111049-A 1 15-FEB-2001;
            IDEXX LABORATORIES, INC. (US)
            On Jun 24, 2001 this sequence version replaced gi:13185501.
COMMENT     .
FEATURES             Location/Qualifiers
     source          1..405
                     /organism="Canis familiaris"
                     /mol_type="unassigned DNA"
```

```
ORIGIN          /db_xref="taxon:9615"

Query Match     64.4%;  Score 393;  DB 6;  Length 405;
Best Local Similarity   100.0%;  Pred. No. 4.4e-212;
Matches  393;  Conservative   0;  Mismatches   0;  Indels   0;  Gaps   0;

Qy     29 ATGAGAATGCTTCTGAATTTGAGTTTTGCTAGCTCTTTGGGGGTGCCTATGTTTCTGCCTTT 88
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 ATGAGAATGCTTCTGAATTTGAGTTTTGCTAGCTCTTTGGGGGTGCCTATGTTTCTGCCTTT 60

Qy     89 GCTCGTAGAAAATCCCATGAATAGACTGGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 148
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 GCTCGTAGAAAATCCCATGAATAGACTGGGTGGCAGAGACCTTGACACTGCTCTCCACTCAT 120

Qy    149 CGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 208
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 CGAACTTGGCTGATAGGCGGATGGGGAACCTGATGATTCCTACTCCTGAAAATAAAAATCAC 180

Qy    209 CAACTGTGCATTAAAGAAAGTTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 268
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 CAACTGTGCATTAAAGAAAGTTTTTTCAGGGTATAGACACATTGAAGAACCAAAACTGCCCAC 240

Qy    269 GGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 328
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 GGGGGAGGCTGTGGATAAAACTATTCCAAAAACTTGTCTTTAATAAAAGAACACATAGAGCGC 300

Qy    329 CAAAAAAAAAGGTGTGCAGGAGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 388
          |||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 CAAAAAAAAAGGTGTGCAGGAGGAGAGTGACAAAGTTCCTAGACTACCTGCAA 360

Qy    389 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACA 421
          |||||||||||||||||||||||||||||||||||
Db    361 GTATTTCTTGGTGTGTAATAAACACCGAGTGGACA 393
```

```
Search completed: August   8, 2005, 20:39:49
Job time : 2942.12 secs
```